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THE FUTURE OF PRIVATE MEDICAL PRACTICE *

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The present condition or status of the private medical practitioner is one which differs from that of a few years ago. By private practitioner is meant the family physician. It must be admitted that he does not occupy the same position that he formerly enjoyed. In no other field of medical practice may be found the intimate relations between physician and patient. The qualified and conscientious family physician assumes responsibility for the members of the family in illness and injury, and safeguards them against unnecessary or meddlesome medical or surgical treatment. He is the councilor and adviser in the various problems of life that confront all parents and their children. He occupies a unique position of the greatest importance in the field of medical practice—a position that brings him true friends who, with few exceptions, are glad to make equal sacrifice for him. No other position in life affords as complete and satisfactory happiness.

I shall attempt to analyze the conditions which have lowered the efficiency and prominence of the private medical practitioner, and then to suggest measures which may restore him to the position which naturally belongs to him if the program for more efficient medical service to the public shall become successful.

APPARENT CAUSES OF DETERIORATION IN STATUS OF FAMILY PHYSICIAN

In the evolution of modern life, society has been and still is characterized by financial greed and by extravagant expenditures for luxuries and pleasures which appeal to the physical rather than to the spiritual man. The cities afford opportunity for display, social pleasures, and for possible success in a professional and financial way. This tempts migration of the professional and the business man, including the young men of the farm, from the country to the city. This migration has increased within the last few years in spite of the more livable conditions of village and rural life, through the advantages of rural free delivery, the interurban trolley and motor cars. At the present time more than half the population of the United States is urban. Thus there is an excess of physicians beyond the need of the city public, and a dearth of medical men to supply the need of the rural population. This breeds discontent and disappointment in the medical profession of the city, and the rural public suffers from the need of a sufficient number of doctors. The country physician lacks modern facilities for diagnosis and for the needed hospital treatment of his patients.

About forty-five years ago, Pasteur made discoveries in bacteriology which revolutionized surgery. The application of these discoveries in surgical operations by Lord Lister resulted in antiseptic surgery. From antiseptic surgery there developed the modern principle of asepsis which has brought so many blessings to mankind. The present status of general and special surgery is characterized by a technical skill which saves life and limb by a bold invasion of the body. This evolution in surgery extended beyond the mere saving of the immediate patient because it enabled the surgeon to study living morbid anatomy and to give the world a better knowledge of the causes and evolution of many organic diseases which had not been thoroughly understood. This opportunity necessarily developed qualified special pathologists in the ranks of the surgeons. If the surgeon does not acquire the needed knowledge of special pathology, he is not a real surgeon in the full meaning of the term. There have been and will be outstanding figures in surgery. These are comparatively few in number. They have justified their professional positions by manifestations of qualities of leadership marked by initiative in the elaboration of instruments, in the technic of operations, and in clinical and laboratory investigations. Aside from these, the rank and file of surgeons is made up of men with no greater intelligence and with no better medical training than the remainder of the profession. Therefore, not all surgeons are qualified in the full acceptance of the word, because a thorough knowledge of special pathology is quite as necessary as a highly developed technic and manual dexterity.

Successful operative surgery, with its spectacular life-saving results, appealed to the suffering public to seek surgical treatment for all manner and forms of disease. This great field for professional opportunity and, necessarily, of financial gain attracted medical graduates to surgery. The result has been unfortunate in many ways, including the application of surgery where it was not needed, and in the evolution of financial compensation far beyond that formerly given to the surgeon and in great contrast to that allotted to the general practitioner. The financial reward promised the successful surgeon, and the spectacular results of the application of operative measures have not only attracted men to the field of surgery and the specialties, but has also set them up as a profession apart from medicine, and the assumption on the part of many of them to be qualified diagnosticians of all conditions which afflict mankind. This assumption has been detrimental to the interests of the general practitioner and has invaded our medical schools, with the result that the

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medical student is not properly taught. I think this is evident if one reads the discussions before societies and the character of curriculums of medical schools. "Surgical pathology," "surgical adbomen," "surgical peptic ulcer," "surgical goiter," "surgical rib" and the like are frequently used. This practice of the association of morbid anatomy and of disease with a form of treatment creates an erroneous impression in the minds of students and practitioners. It suggests treatment before the diagnosis is made

While evolution in surgery has taken place with the coincident conditions I have described, those physicians who have had the opportunity to take advantage of the knowledge given to the world by the investigations made by laboratory and clinical workers have been able to keep in the front rank of medical knowledge and practice. Lack of opportunity and peculiarities of environment have kept the general practitioner in the background. In general, he has been neglected and left to fight his own battles. Surgeons and physicians who have acquired enviable position and leadership have not had the vision or the unselfishness to plan ways and means for the improvement of the status of the general practitioner. As a result, he has sought the easiest way to attain the main object of his life; that is, the acquisition of sufficient financial remuneration to secure a decent living. It is not strange, therefore, that he should run after spectacular measures of cure in the treatment of his patients in the attempt to satisfy an ignorant public for this sort of treatment. Medical science has given us specific therapeutic products in the form of antitoxic serums, antiserums, chemicals, biochemicals, a very few specific bacterial antigens and a few drugs. These have been real life-saving measures. The average practitioner, ignorant of the principles of immunity and without opportunity to obtain the needed postgraduate study, has naturally accepted the alleged specific therapeutic aids offered him by commercial proprietary medical corporations luring him with printed propaganda characterized by misleading and untruthful statements.

Furthermore, the great advance made in methods of physical and functional diagnosis are of the greatest value to those members of the profession who may command them; but these new measures of diagnosis confuse the general practitioner because they are too technical for his comprehension and are usually unavailable. The laboratory workers and clinicians who have developed new efficient apparatus and methods of physical and functional diagnosis have failed to provide and describe the more simple apparatus and tests which, if made available, would give the general practitioner valuable and practical aids in his daily work. Many practitioners left without instrumental and laboratory facilities for diagnosis apparently believe that the brain, special senses and hands are no longer of use as diagnostic aids. My experience of years in a consultation and referred practice is that many practitioners neglect to make a physical examination which was formerly the practice with the majority of good men. As an instance in point, blood pressure instruments are the sole means utilized by many to obtain a knowledge of cardiovascular conditions. A careful physical and functional examination of the heart, always available, is neglected, while the knowledge obtained from the blood pressure is often misleading.

It may be seen, then, that neglect on the part of those who should have acted long ago in the interest of the general practitioner, and his own apathy, have developed a condition in the profession which is harmful to him and detrimental to the public.

The proposal of the statutory enactment of compulsory health insurance by many states has been a cause of much discontent, unrest and fear in the medical profession. The resulting uncertainty as to the future of the private practice of medicine has been and is a cause of lessened efficiency of the practitioner which is detrimental to him and to the patients he serves.

There is an increasing tendency on the part of the federal government and of the department of health of some states to establish clinics for the medical and surgical treatment of certain infectious diseases. The general practitioner is naturally jealous of federal or state paternalism in the treatment of disease. The whole profession welcomes and, with few exceptions, heartily cooperates in the effort of the state to prevent disease and injury. The subject of state medicine will be more fully discussed later on.

CORRECTION OF CONDITIONS FOR IMPROVEMENT OF STATUS OF GENERAL PRACTITIONER

Primarily, the correction of conditions for the improvement of the status of the general practitioner implies the relation of the medical profession to the lay public. Too often I think that we are apt to consider ourselves as separate from the public. The fact is that we are only a small part of the general public; in round numbers, there are about 150,000 licensed physicians in the United States, while the population approximates 110,000,000. In other words, there is about one physician to 800 laymen. If we are to consider anything which shall be of lasting benefit to the medical profession, it must afford the lay public equal consideration in relief from disease and injury. Therefore, in a consideration of the measures which must be instituted to improve the status of the private practitioner, we must keep in mind the welfare of the public.

In this connection it is well to remind ourselves of the privileges granted to us as a profession. We are likely to emphasize the fact that we, as the servants of the public, give service to the sick poor and to public institutions without financial remuneration. It is quite true that the medical profession is imposed upon in this regard. But it is not becoming to a profession which demands recognition as a learned and dignified body to boast of its great philanthropic service. The fact is that few of us appreciate the privileges we enjoy under the law. Those who are conscientious will not take advantage of these privileges. Those who are thoughtless, and certainly those who are not entirely honest, will do so. How many of us think of the fact that we may operate on a patient who is entirely ignorant of the reasons for the operation, or of how many patients take in full faith the drugs which we prescribe; while, if the result is disastrous, and especially if it is followed by exitus from the world, that no one will question the statement made in the certificate as to the cause of death? It is only in unusual conditions of death or in those associated with criminal processes that an inquisition is held. Any group of us may organize a hospital which, if properly conducted, is of great use to the community as well as to those who administer the hospital; but who is there to inquire into the manner in which the professional work of the hospital is conducted under the existing statutes? Under the law the physician is relieved from jury service; under the law he is privileged, with certain restrictions, sometimes embarrassing, to prescribe narcotic drugs and alcohol as

therapeutic agents. I have cited these privileges as a reminder that as a privileged profession we should uphold the law as good citizens, never forgetting that we are a part of the general public.

The factors which will improve the conditions of country practice and which may attract physicians to the country include the fundamental improvement of the environment of the country doctor. Rural life must be made more attractive. This involves better living conditions, better schools and places of amusement. But of special importance is the need of facilities for the diagnosis and treatment of the rural population. Of the latter point I shall speak farther on.

What I have said of surgery in relation to general medicine was written without prejudice. I believe that the opinion expressed concerning the need of readjustment between the surgeons and the remainder of the medical profession will be acknowledged by all broad-minded members of the profession. This readjustment must accept the principle that medicine is the mother, and that general surgery and all of the specialties of surgery and medicine are her offspring. Medicine and surgery, including all of the specialties, must recognize their interrelations, and in operation must be coordinated as the cells and the organs of the body must be coordinated if a healthy organism is to exist. Surgeons of influence should correct the errors due to the too frequent application of the word "surgical" to morbid processes and conditions. Disease and its results should be studied, and when the morbid condition is correctly recognized, appropriate treatment may be given. This thought is in the mind, I am sure, of a good many surgeons and general practitioners. I feel justified in quoting from a letter written to me last July by Dr. William J. Mayo: "Surgery should be put back where it belongs, a means of mechanical therapy in conjunction with medicine, and should not continue in competition with the internist as it has in the past." This frank and rational statement is in keeping, I believe, with the present tendency of the profession. We must induce the surgeons to return to the medical fold and to cooperate in the attempt to improve the opportunities and the facilities for practice of the general practitioner that he may again occupy the important and fundamental position in the field of practice to which he belongs. In this connection, too, we must consider the inequality of the financial compensation of the surgeon and the physician, for it requires readjustment. How the problem may be solved must be studied and determined by a group of physicians, surgeons and specialists who will approach the subject with the desire to afford justice for all concerned, including the lay public.

RESPONSIBILITIES OF MEDICAL COLLEGES

Those who are responsible for the education of the medical student should readjust the curriculum for even greater training in the fundamental branches of medicine, and especially to add greater emphasis to applied science: to readjust the clinical curriculum, with emphasis to be placed on the training in general and special pathology, in physical and functional diagnosis, and to the training in the recognition of disease by actual contact with the patient. The student should be made to understand that the main problem of his present and future is the study of and recognition of morbid anatomy and modified physiology. The general principles of medicine, therapeutics, surgery and of the several specialties should be taught. The technic necessary in diagnostic methods, in surgery including the specialties, must receive adequate attention; but the main point should be kept in mind that the school is engaged in the attempt to turn out graduates who are well grounded in all of the fundamentals pertaining to the general practice of medicine. They cannot become surgeons or specialists until they shall have studied and practiced for a sufficient length of time to qualify themselves. The curriculum of most medical schools is faulty in that the attempt is made to teach the student too many alleged facts to the detriment of principles; this leads to a curriculum so overcrowded that the student receives a smattering of knowledge which is inadequate to fit him for efficient work in general medicine, and he is certainly not qualified to practice surgery or a specialty. The fifth or intern year corrects some of the faults by giving him the actual practical bedside training which should have been a greater part of the means of instruction in the third and fourth years.

We must secure the cooperation of those qualified to investigate and invent new diagnostic instruments and laboratory methods of diagnosis to supplement the published results of their work, so simply phrased that the average practitioner may understand and apply selected simple tests and methods in his diagnostic work. For example: The elaborate laboratory tests of the blood and urine, with prescribed diet and other required factors to arrive at a diagnosis of the function of the kidney, may be replaced by perfectly simple measures of examination easily within the command of the private physician which will afford him fundamental knowledge not otherwise obtainable. We must by some means make the private practitioner understand that a rational application of his brain, special senses and his hands will enable him to arrive at a diagnosis in the majority of the patients he serves. We must also try to induce him to keep written records of his patients. This will inculcate the habit of painstaking care and thoroughness in his practice. It does not take long to establish a reputation of thoroughness and efficiency in one's work. Efficient service will usually bring satisfactory financial returns. It must also be stated that thoroughness in diagnosis makes the problem of therapy a simple procedure. One who follows this practice will usually avoid the pitfalls attendant on the use of nostrums and psuedospecific antiserums, therapeutic bacterial antigens, and the like.

GROUP MEDICAL PRACTICE

During the last few years, group medicine, or diagnostic clinics, have become the vogue, especially in the smaller cities. Group practice is considered by most members of the profession as a distinct advance in the methods of medical practice. This is undoubtedly true so far as it pertains to the members of the profession forming the group and that part of the public sick and injured who receive service from the clinic. But if group practice is to succeed in the sense of improvement of medical service in any given community, then the policy pursued must include efficient service and fair dealing with the whole public, both lay and medical. Group practice must deal in a broad-minded, unselfish and sympathetic manner with the physician in the district which it serves. If he does not belong to the group he should be invited to profit by and through its facilities in diagnosis and otherwise, if he desires it. If, after diagnosis, the condition of the patient is such that he may continue in charge, he should have that right. If the character of the disease is such that the therapy

requires greater technical skill than the family physician can give and which the group can furnish, then in due time the convalescent patient should be returned to him with such information as may aid him in the after-care of his patient.

COMPULSORY HEALTH INSURANCE

Compulsory health insurance, I believe, would be unsatisfactory to the people it is intended to benefit. In the main, it is class legislation, which usually brings injustice to some other class than those it is intended to help. Under compulsory health insurance the chief sacrifice made in service and money would apparently fall upon the medical profession. It is intended to benefit the working class, many of whom earn as much or more in wages than the average annual income of the private practitioner. In my opinion, its alleged advantages to the laboring class do not solve the problem of better and more efficient medical service for the people whom it is intended to benefit. Its application will be more likely to degrade the members of the medical profession who become its servants. This derogatory influence on a part of the profession is most likely to be reflected on other physicians in the community, with the resulting deterioration of medical service to the whole population. There is an axiom which is related to all schemes intended to benefit the public health. It is this: The chief dependence for the conduct of the necessary ways and means to improve health and lengthen life must be placed on the medical profession. I think it may be said that the majority of the medical profession is opposed to the statutory enactment of compulsory health insurance.

STATE MEDICINE

Mention has been made of the tendency on the part of the federal government (U. S. Public Health Service) and of the departments of health of some states to establish clinics for the treatment of certain diseases. There may be rational grounds for this policy in sparsely populated regions of the country which are not provided with a sufficient number of resident physicians to care properly for the sick. With this exception there is no rational basis for this sort of paternalism on the part of the federal or of the state government. State medicine is naturally and properly concerned in the matter of public health relating to sanitation: air and water pollution, food contamination and adulteration, the prevention of the spread of communicable diseases, and the like. The state properly may standardize and enforce certain rules of procedure: notification, methods of disinfection, and the like, for the medical practitioner in the management of patients who suffer from communicable diseases; but the treatment must be left with the physician. Indeed, the administration of preventive medicine owes its success to the cooperation of the general practitioner with the sanitarian. Most qualified sanitarians know little or nothing and do not need to know anything of the practice of medicine. There is no doubt that a well organized clinic, properly conducted, will give more efficient medical and surgical service than may be rendered by individual physicians with poor facilities. But experience shows that centralized administration, either federal or state, of activities dealing with the health or with the treatment of the sick and injured, is likely to become bureaucratic and occasionally is subject to political debasement. Under our own government we may not depend with assurance that the honest and rational administration of any term of years will be followed by subsequent administrations. The state should take an active interest in the treatment of the sick and injured. This it may do as I shall attempt to show farther on, by aiding a community to secure facilities for the use of the local medical practitioners in the diagnosis and treatment of the sick and injured.

One may not dispose of the subject of compulsory health insurance and state medicine as I have done. Compulsory health insurance, especially, has many advocates, chiefly among the lay public. The friends of this measure will continue to urge legislative action in each state. Therefore, if the medical profession sincerely believes that compulsory health insurance and state medicine do not offer adequate measures to improve and give efficient medical service to the public, then the medical profession should oppose their enactment into law. This means action by a united profession guided by principles based on rational grounds that the measures proposed are wrong. This does not wholly meet the situation, even if united action may prove successful in the defeat of these measures. We should be able to offer a constructive program in substitution of one or both of these measures, which must also be approved and supported by the whole profession.

HEALTH CENTERS

In 1909, the legislature of Illinois placed on the statute books an enabling act which permits the people of any county, by referendum, to impose a tax upon themselves for the care of the dependent tuberculous patients in the community. At the present time forty-two of the 102 counties of the state have taken advantage of this law, with benefit to the sick tuberculous poor and to all of the people. At the beginning, some physicians believed erroneously that the administration of this act by any county would be harmful to them. I have been told by those who are apparently qualified by experience to know, that the medical profession in the counties which have taken advantage of this act wholly approve of it.

This successful application of the principle of voluntary self taxation by the voters of a county to pay for the necessary facilities for the prevention of and for the treatment of the tuberculous population affords the means of solution of the problem under discussion.

The extension of this principle to include the prevention and the treatment of all diseases, disabilities and injuries of a community is a feasible proposition. For its accomplishment it becomes necessary to specify the requisite principles and policies to be embodied in a bill to be presented to the legislature for an enabling act which will permit the voters of any suitable community to take advantage of the referendum and establish a health center.

The principles and policies involved in the establishment of a health center involve a discussion of the unit of population to which it is adaptable, its organization, its management, its financial support and its functions.

ADAPTABLE UNIT OF POPULATION

A population of from 50,000 to 200,000 within a geographic political territory is adaptable to the benefits which a health center affords. This population may be found in one or more city wards, in one or more townships, in a county, or in a district of two or more counties. A district of two or more counties may establish a health center for a comparatively large

territory by an organization which will provide a principal hospital at the most accessible locality, with subcenters and small hospitals at other points in the district.

ORGANIZATION OF CENTER

The organization embraces the erection of a modern hospital or the adaptation of an existing hospital with provision for all sick and injured who require hospital care, including maternity and tuberculosis patients, and those suffering from scarlet fever, diphtheria, measles and the like; the minimum capacity to provide one bed for each unit of 500 of the population; adequately equipped diagnostic and clinical laboratories of chemistry, pathology, bacteriology, serology and radiology; a personnel of a qualified superintendent, assistants, clinical and medical social nurses and laboratory technicians; a medical and health reference and circulating library; suitable rooms for medical and social welfare meetings, and adequate provision for an outpatient and diagnostic clinic.

MANAGEMENT OF CENTER

The responsibility for the business management should be vested in a board of trustees or commissioners, of whom one should be a practitioner of medicine, elected by the voters of the district or appointed by the county judge or other officer for stated periods of service. The trustees should manage the property of the center, provide for its upkeep, direct its finances, secure the application of the proper annual tax rate for the district in support of the center, fix the salaries of all employees, and perform other like duties.

The responsibility for the medical management should be placed in a board composed of local medical practitioners and surgeons appointed by the ward (branch), county or district medical society. The medical board should be responsible for the organization of the medical practitioners embraced in the center, with the object of establishing unity of action and just dealing with all members of the profession and the public; establish rules and regulations in cooperation with the superintendent of the center for the conduct of the professional work of the hospital and diagnostic center; make specifications for the medical and health literature for the library and cooperate with school boards and with state or municipal health authorities in the promotion of health inspection of schoolchildren, in instruction of pupils in personal and general hygiene, and in the proper application of physical training of children and other like duties.

Joint action of the board of trustees and of the medical board will be necessary in many instances, such as the selection of the superintendent of the center, and the employment of laboratory technicians.

FINANCIAL SUPPORT OF CENTER

By virtue of the enabling act and of the referendum, the people of a community may provide for an annual tax or for an issue of bonds to pay for the primary cost of the buildings, equipment and the like in the organization of the center and for the maintenance and administration of the center. The state should subsidize the project, especially the first cost of construction or adaptation of the necessary buildings for the hospital, the laboratories and administration, and for adequate equipment. The state should also make an annual subsidy to aid in the maintenance and administration of the center. The amount of the subsidy should be small compared with the whole cost, but the principle governing the state subsidy should be elastic enough to permit the establishment of health centers in pioneer and relatively poor communities by liberal financial state aid. The benefits which the center affords will be available to all the people of the district. The sick and injured poor will receive free or partial pay service in the diagnostic center and when necessary in the hospital. The well-to-do will pay for hospital board, lodging, laboratory tests and the like. The financial income for this service from patients able to pay will make the diagnostic center and hospital largely self supporting. As the work of the center develops and its efficiency improves, the per capita cost deficit should diminish. Sickness, especially persistent chronic types, is the most potent cause of poverty. Therefore, lessened morbidity will eventuate in fewer people unable to pay for their hospital care and for the services of a physician. The efficient administration of a center should result in a gradually lessened tax on the people it serves.

In the discussion of the finances of the center, it is advisable to express at this time the necessity of the recognition of the principle that the fee of the physician or surgeon for services rendered the sick and injured of the territory embraced in the center in their homes, in the diagnostic center and in the hospital belongs to him. The chief reason for the organization of health centers is to afford the public more efficient medical and surgical service by providing the medical practitioner facilities for the diagnosis and treatment of his patients. As a tax payer he joins with the patient in securing these facilities, and the fee properly belongs to him. It is only in those communities in which there is a sparse population with too few local medical practitioners to care for all the sick and injured that an established health center should maintain a salaried staff to provide hospital professional treatment. In this event the fees would be collected by and used to support the center.

FUNCTIONS OF THE HEALTH CENTER

The chief function of the center is to promote community health. This it does by providing the medical profession of the territory with available adequate facilities for diagnosis and hospital treatment of all patients who require it. The medical social service personnel affords valuable aid to the physicians in the care of patients and convalescents in their homes, in prenatal and maternity care, and in infant and child welfare. Facilities are afforded through the center and the medical board for the adequate inspection of schoolchildren, for the correction of remediable physical defects, for the physical education and training of pupils, and for other like benefits. The center provides facilities, including an organized medical profession for adequate public health work in the community. In this connection a principle should be recognized which concerns the legal relation of the state to the functions of the center. As the center will be a most valuable agency in public health work, the state department of health should standardize the type and plans of hospitals, laboratories and equipment for the sake of uniformity of construction and efficiency of service. In addition to their use in the diagnostic clinic, the laboratories should be recognized as branches of the central laboratory of the department of health. The work of the public health personnel of the center should be standardized by the department of health. Field officers of the department of health should inspect the work done by and should promote the cooperation and

efficient health work of the public health personnel of the center. Experience shows that health promotion work is done best if it is administered by the people benefited, provided standards of work are furnished them, and provided these standards are maintained by the inquisitorial watchfulness of a higher authoritative body.

As the representative body of the organized profession, the state medical society should formulate standard rules and regulations for the uniform action of the county and district medical societies regarding their relations to the health centers. These relations include the appointment or election by the county or district medical society of the medical board of management of the center, the promotion of postgraduate medical work in the center, the compilation of a uniform rational fee bill, and other objects which require uniformity of action. The branch, county or district medical society should be left free to administer its own medical affairs. At the annual meeting of the state medical society, problems relating to the medical conduct of health centers will be live and interesting subjects for discussion.

CONCLUSION

In this discussion I have not mentioned the attempts which have been made to establish health or community centers based on principles and policies which were intended to provide adequate medical surgical treatment of residents of rural districts and of other individuals. Attention is invited to a bill introduced into the senate of the state of New York by Mr. Sage in March, 1920. In my opinion this bill does not give sufficient consideration to the welfare of the medical profession. By this I mean that its provisions emphasize centralization of administration through the state department of health. On the other hand, I have attempted to discuss principles and policies in the establishment of health centers which will promote the public welfare and at the same time will provide facilities for the diagnosis and treatment of patients by the medical profession, and which will stimulate postgraduate study and professional improvement. These provisions should improve the conditions of medical practice in rural and even in other districts to such a degree that members of the medical profession will be attracted to settle in such favored localities.

If the medical profession approves of the suggestions made for the establishment of health centers under the principles and policies enumerated, we shall have a rational basis and argument for more complete organization of the profession. However, one must recognize that unselfish, understanding, broad-minded and sympathetic leadership in the ranks of the medical profession of every community is a prerequisite to the successful solution of the problem involved in the title of this paper.

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Mosquitoes and the Destinies of Armies.—The rôle played by the mosquito in shaping the destinies of the British Salonika force may be partly realized from the fact that the total admissions to hospitals for malaria during the years 1916, 1917 and 1918 amounted to 161,560. Expressed as a ratio per thousand troops, this number is equivalent to 1,053 per thousand, the ratios for the respective years being 331, 353 and 369 per thousand. These figures, large as they are, do not represent the whole incidence of malaria, since they include only admissions to general hospitals, stationary hospitals and casualty clearing stations.—A. G. Phear, *Lancet*, July 10, 1920.

ULCER OF THE JEJUNUM FOLLOWING GASTRO-ENTEROSTOMY *

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Ulcer of the jejunum following gastro-enterostomy is caused by gastro-enterostomy. Even the most ardent advocates of this operation must admit the causal relation. The manner in which it produces the ulcer has been the subject of considerable discussion. A jejunal ulcer is rarely found except after gastro-enterostomy, though sometimes it occurs after diseases that destroy the efficiency of the pyloric portion of the stomach or that interfere with the normal character of the gastric or duodenal secretion. Oviatt [1] says: "Peptic ulcer of the jejunum is rare; usually following the operation of gastro-jejunostomy. . . . It has never been reported following the operation of pyloroplasty or gastroduodenostomy for benign conditions."

Jejunal ulcer, however, has been known to occur without any previous operation. Robert C. Bryan [2] of Richmond reports such an ulcer which perforated and caused death. Bryan's patient was a man in whom there was marked disease of the stomach and duodenum; he thinks that the pathologic condition of the stomach and duodenum prevented the proper protection of the jejunum.

W. T. Terry [3] of San Francisco reports operating in three cases of jejunal ulcer following gastro-enterostomy which occurred in his practice between 1914 and 1918. In none of these three cases was the gastro-enterostomy opening closed, and in one a recurrence of the jejunal ulcer demanded a third operation, while in another the clinical symptoms show strong probability of a recurrence of the ulcer. Such an experience in the practice of one surgeon within four years is very significant. The cases of Terry are carefully reported, and he arrives at the conclusion that the chief cause of jejunal ulcer following gastro-enterostomy is the fact that the acid gastric juice is poured into the jejunum, which is accustomed to alkaline contents.

While there can be no doubt that gastro-enterostomy causes ulcer of the jejunum, the manner in which it does this has been given various interpretations. It seems most probable that the theory of the ulcer's being due to the dumping of the acid gastric juice into the jejunum is correct. There is no viscus of the body in which we can permanently alter the physiology by changing from a strongly alkaline to an acid medium, or vice versa, without causing derangement of function. The urinary bladder, for instance, is accustomed to urine that is acid, and a change to alkaline urine for a considerable length of time produces irritation and eventually cystitis. If the acidity of the gastric juice is greatly lowered, even though the reaction may not be changed, symptoms are usually produced. It seems, then, that instead of magnifying the importance of technical errors of the operation, we can more justly regard the violation of a broad physiologic principle as the cause of jejunal ulcer. This, too, is borne out by the fact that jejunal ulcer is rarely if ever observed

* Read before the Southern Surgical Association, Hot Springs, Va., Dec. 16, 1920.

1. Oviatt, C. W., in Bryant, J. D., and Buck, A. H.: American Practice of Surgery, New York, William Wood & Co. **7**: 718.
2. Bryan, R. C.: Surg., Gynec. & Obst. **22**: 279 (March) 1916.
3. Terry, W. L.: Ulcer of Jejunum Following Gastrojejunostomy, J. A. M. A. **75**: 219 (July 24) 1920.

after pyloroplasty, and that gastro-enterostomy after cicatricial obstruction of the pylorus invariably gives the best results. Thus, Balfour [4] says, "The best results after gastro-enterostomy occur when there is stenosis of the pylorus."

This clinical observation can be explained by the fact that in cicatricial stenosis of the pylorus no gastric juice enters the duodenum through the pylorus, but the stomach contents are emptied entirely through the gastro-enterostomy stoma. Before the gastro-enterostomy was performed, the powerful contractions of the stomach would force a meager amount of gastric contents through the stenosed pylorus; but after the gastro-enterostomy, the stomach can empty itself easily without the necessity of such strong contractions. Consequently, the stenosis becomes complete when not subjected to the pressure from strong peristalsis. Such pressure is impossible when there is a leak at the gastro-enterostomy opening. This complete stenosis prevents the lowering of the alkalinity of the duodenal contents by the passage of gastric juice through the pylorus, so the duodenal secretion is delivered at the stoma of the gastro-enterostomy with its maximum alkalinity, and can readily neutralize the acidity of the gastric juice and protect the jejunum from the deleterious effects of the acid. This result is not obtained by a temporary closure of the pylorus because, as is well known, it is difficult or impossible to occlude the pylorus artificially. When the pylorus opens after an infolding or a ligature, the acid gastric juice again enters the duodenum, lowers the alkalinity of the duodenal contents, and so prevents the protection of the jejunal mucosa at the stoma of the gastro-enterostomy.

Fig. 1.—Location of jejunal ulcer in Patient B. V. The ulcer is about opposite the opening into the stomach and has penetrated into the mesentery of the jejunum.

Naturally, alteration of gastric juice in which acidity is increased or diminished, or change in duodenal secretion will have a pronounced effect. It is possible to imagine a condition in which the alkalinity of the duodenal contents is so low that it cannot overcome the acidity of the gastric juice until the jejunum is reached. This may account for those rare cases of ulcer of the jejunum that do not follow gastro-enterostomy, as reported by Bryan.

The frequency of ulcers in the pyloric end of the stomach and in the adjacent duodenum has not been fully explained. The work by T. B. Reeves [5] of the Mayo Clinic, on the blood supply of the stomach and duodenum in relation to ulcer, throws some light on this subject. Reeves shows that the anatomic arrangement of the arteries along the lesser curvature of the stomach and throughout the first inch of the duodenum predisposes to thrombosis and renders these vessels very likely to be occluded by emboli. Undoubtedly, the chief direct cause of ulcers of the stomach and duodenum is sepsis, which probably comes, as Rosenow has so frequently demonstrated, from hematogenous infection with streptococci. It is highly probable that for every gastric or duodenal ulcer that persists for months or years, there are many other lesions in this region that heal readily. It is also probable that at the time of the origin of the ulcer, the hematogenous infection produced irritation or inflammation in the gallbladder, appendix, pancreas, kidneys and other organs. These viscera usually recover and may completely throw off the evidence of infection. If the gastric or duodenal ulcer persists, it may erroneously be regarded as having been the sole lesion, when in all probability it is merely a survival of multiple lesions.

In ulcer of the jejunum the etiology appears to be different. We are not surprised at the erosions which a gastric fistula, for instance, causes on the skin, because the skin has but little natural resistance against the acid gastric juice. A fecal fistula high up in the small intestine also produces ulceration on a cutaneous surface. This happens because nature has not prepared the skin for constant contact with these body juices, which in their normal surroundings produce no reaction. Why, then, should we marvel when the normal jejunum, accustomed to an alkaline medium, protests against the acid gastric juice, any more than when ulcers are produced on normal skin by the constant flowing over it of either gastric juice or succus entericus?

The lesser causes of jejunal ulcer are too greatly emphasized. Nonabsorbable sutures undoubtedly predispose to ulceration at the site of a gastro-enterostomy. The use of clamps or any unusual trauma, the turning in of too much tissue and interference with the blood supply, are all direct causes of jejunal ulcer; but even when all these things are eliminated, jejunal ulcer still follows gastro-enterostomy, though in a smaller proportion of cases.

If we have a patient with a large scar on the leg, we know that the slightest trauma to this scar will result in slow healing. A scratch that elsewhere in the body may be repaired perfectly will often on such a scar produce an ugly ulcer. Infection is difficult to overcome in such tissue. It is true that the immediate trauma over this scar is the direct cause of the ulcer, but we should not disregard the fact that such a trauma elsewhere would not produce an ulcer. The use of clamps, and of linen or silk sutures, and even slight interference with the blood supply, elsewhere in the

4. Balfour, D. C.: Surg., Gynec. & Obst. 24: 731 (June) 1917.
5. Reeves, T. B.: Surg., Gynec. & Obst. 33: 374 (April) 1920.

gastro-intestinal tract rarely give rise to symptoms. Though the pyloroplasty of Finney is performed with silk, and though intestinal sutures are usually of silk or linen, we do not hear of nonabsorbable sutures or the use of clamps in these regions causing ulcers or bad results.

The probable explanation is that the changed physiology in the jejunum caused by the gastro-enterostomy weakens the resistance of its tissues, and that traumas or nonabsorbable sutures that are easily taken care of elsewhere cannot be borne here.

A jejunal ulcer often occurs around the margin of the gastro-enterostomy opening. This, probably, is because the mucosa of the jejunum nearest this opening is least protected from the effects of the gastric juice. Its resistance, therefore, is lower, and the trauma or the suturing, particularly if there is the added insult of nonabsorbable sutures, causes the ulcer. It is interesting, however, to find that in none of Terry's three "cases were any retained sutures found, although search was made for them."

The ulceration may occur where the current of gastric juice strikes the wall of the jejunum opposite the stoma. In such ulcers in a region where the blood supply of the jejunum is unimpaired in any way, it seems that no other interpretation can be put

Fig. 2.—Specimen containing jejunal ulcer after resection of the jejunum (Patient B. V.).

on the cause of the ulcer than that it is due to the effect of the gastric juice. In the following case the ulcer occurred in this location.

REPORT OF CASE

B. V., a man, aged 41, white, entered the hospital, May 27, 1914, suffering on the right side of the abdomen with severe pain which came on suddenly. The pain seemed chiefly over the right iliac fossa. A muscle splitting operation over the appendix showed it somewhat inflamed, though not sufficiently inflamed to account for the severe pain. The appendix was removed, and an incision was made over the gallbladder region. A duodenal ulcer was found, which had perforated to the peritoneum and was plastered over with the gallbladder. The ulcer was folded in, and a posterior gastro-enterostomy was performed without clamps. The patient did well for a few months, and then began suffering from hunger pains and abdominal discomfort. An operation, Aug. 8, 1916, revealed many adhesions about the pylorus and gallbladder, with a marked scar at the site of the duodenal ulcer. The gastro-enterostomy opening, which had contracted considerably, was enlarged, chromic catgut being employed for sutures. For about two years the patient did very well. Then he had hunger pains and general abdominal discomfort. After clinical examination by Drs. Call and Porter and roentgenographic examination by Dr. Fred Hodges, a diagnosis of jejunal ulcer was made. A third operation was performed, Jan. 30, 1920. The gastro-enterostomy was disconnected and the stomach opening was closed. A perforating ulcer was found in the jejunum on the mesenteric border (Fig. 1). It had opened into the mesentery of the jejunum. The ulcer was about one-half inch in diameter and was opposite the stoma of the gastro-enterostomy opening. The affected portion of the jejunum which contained the ulcer was resected (Fig. 2) and united by the end-to-end method. The new pyloroplasty was performed. At the site of the old duodenal ulcer there was considerable scar tissue, most of which was excised. The gallbladder was very thick and adherent, but contained no stones. It was not removed. The patient suffered some pain shortly after the operation. This pain was occasionally better, but recurred at intervals, and was quite severe. It was partially relieved by food and alkalis. A roentgenographic examination disclosed marked retention in the stomach, with many adhesions around the pylorus and duodenum, and the possibility of an ulcer. The patient was again operated on, Dec. 6, 1920, and the gallbladder was found thick and universally adherent. There was an ulcer just to the gastric side of the pylorus, on the lesser border of the stomach. This had perforated into the gastrohepatic omentum and formed a little cavity about one-half inch in diameter. The anterior wall of this cavity was formed by the adherent gallbladder. The gallbladder was removed in the usual way. The margins of the ulcer were disinfected with the cautery, and the ulcer was excised. The cavity was disinfected with a piece of gauze soaked in pure phenol (carbolic acid), and its walls were carefully dissected away. The tissues were mobilized and the cavity was closed. The opening of the ulcer was enlarged by a short incision into the stomach, inward and slightly downward. The wound was closed by interrupted sutures of tanned catgut for the mucosa and two layers of continuous linen sutures. The patient made a satisfactory operative recovery.

COMMENT

A recurrence of this ulcer just on the gastric side of the pylorus was probably due to the fact that closure of the gastro-enterostomy opening suddenly switched all of the gastric juice over tissue that had poor resistance because of the scar tissue from the previous infiltrating ulcer and a subsequent pyloroplasty, while the diseased gallbladder, which was markedly adherent at previous operations, still remained as a focus of infection.

RESULTS OF GASTRO-ENTEROSTOMY

If, then, the physiology of the jejunum is so upset by gastro-enterostomy, why is gastro-enterostomy generally considered a satisfactory operation in duodenal or gastric ulcer? If any considerable number of gastro-enterostomies for gastric or jejunal ulcer with an open pylorus are followed up, the results will usually be found far from satisfactory. If the ulcer is the chief or the sole surviving lesion, we have a right to expect a permanent and complete cure in most cases. That this is not true, however, can be testified to by many internists, whom the patients with gastro-enterostomies are more prone to consult than the surgeon. Thus, Frank Smithies,[6] who was formerly gastro-enterologist at the Mayo Clinic and is now at the Augustana Hospital in Chicago, has reported his observations of 273 patients on whom gastro-enterostomy was performed. His paper was not intended primarily as critical of the beneficial results of gastro-enterostomy, but his statistics show that of this entire number only 20.9 per cent. of the patients were clinically complaint free, while twenty-eight, or 80 per cent., of the duodenal ulcer patients on whom gastro-enterostomy had been performed had pain or distress, and many of them had other symptoms, such as gas, nausea or vomiting.

These symptoms do not usually follow gastro-enterostomy at once. It is only after continual perversion of the physiology of the jejunum that nature protests. It is probable that many jejunal ulcers fol-

6. Smithies, Frank: Surg., Gynec. & Obst. 26: 275 (March) 1918.

lowing gastro-enterostomy never come to operation, and it is even more probable that for every patient who has a jejunal ulcer, there are several others who have hyperemia or irritation of the jejunum causing marked symptoms. In this way, then, we can account for the late results in Smithies' report, showing only 20.9 per cent. of the patients complaint free after gastro-enterostomy. Doubtless some patients with unusual resistance can overcome the unphysiologic handicap of a gastro-enterostomy, and in this way we may account for the 20.9 per cent. who remained complaint free after gastro-enterostomy. All of us know patients who go through life with many handicaps and without com-

Fig. 3 (Mr. M. L. S.).—Constant prepyloric filling defect (ulcer) shown at arrow. Tracing from roentgenogram taken a few days before pyloroplasty, which was done May 6, 1919.

Fig. 4 (Mr. M. L. S.).—Tracing from roentgenogram, taken Nov. 25, 1920. Note the excellent pyloric sphincter and duodenal cap. There is no filling defect. The patient is complaint free.

plaint, whereas the same conditions in others will produce pronounced symptoms. This fact, however, should not justify unphysiologic surgical procedures.

INDICATIONS FOR GASTRO-ENTEROSTOMY AND FOR PYLOROPLASTY

That there is a distinct field for gastro-enterostomy is obvious:

1. When there is cicatricial stenosis of the pylorus and duodenum so marked that the duodenum cannot be returned to normal and no bleeding, gastro-enterostomy gives excellent results for the reasons already explained.

2. When there is a subacute perforation of the duodenum with such extensive leukocytic infiltration that its walls will not hold sutures, eventually stenosis is almost certain to occur. Here the tissues will not hold sutures, and pyloroplasty should not be done.

3. In obstruction of the pylorus from inoperable malignant growths, gastro-enterostomy is, of course, the proper operation.

In most of the other cases, whether the ulcer is located in the body of the stomach or elsewhere, or when pyloric stenosis is confined to a narrow band of tissue, pyloroplasty is indicated. Occasionally the location of the ulcer demands a pylorectomy. When the ulcer is in the duodenum and is an inch or more from the pylorus, excision of the ulcer transversely and suturing of the wound in this direction, as practiced by Judd, gives excellent results. In such a location the ulcer may be treated without reference to the stomach or pylorus.

TECHNIC

W. J. Mayo [7] says that when operating for gastro-jejunal ulcer, "We now cut off the gastro-jejunostomy, close the stomach and jejunum and make a pyloroplasty after the method of Finney." Apparently this procedure has given satisfactory results in his hands, whereas, in two of the three cases reported by Terry, there appeared to be a recurrence of the jejunal ulcer when the gastro-enterostomy opening was not closed. It seems logical to conclude that if a pyloroplasty is the proper procedure for the cure of a jejunal ulcer following gastro-enterostomy, the pyloroplasty in the first instance would have been excellent prophylactic treatment for jejunal ulcer.

Elsewhere [8] I have reported a new pyloroplasty which seems to have the advantages of simplicity and of restoration of tissues to their physiologic normal. It should be remembered, however, that the origin of a gastric or duodenal ulcer is probably from hematogenous infection, and the ulcer is frequently accompanied by other lesions, such as cholecystitis, which produce adhesions. It is even more necessary in pyloroplasty to remove a diseased gallbladder or to prevent the formation of firm adhesions than it is after gastro-enterostomy, because the normal peristalsis in the region of the pylorus will cause a tugging on adhesions that will produce pain; whereas, in gastro-enterostomy, the necessity for even normal peristalsis at the pylorus is diminished and the tugging on these adhesions is reduced to a minimum. It must be emphasized, then, that in performing a pyloroplasty a diseased and adherent gallbladder should be removed, but with as little trauma as possible, and the raw surfaces and the tube to the cystic duct if a tube is used should be fully covered with fat and omentum. The patient also should lie chiefly on his left side for several days after the operation to prevent the duodenum from being drawn up to the liver.

Since the first publication on this pyloroplasty, in which eleven cases were reported, a few changes have been made in the technic. Instead of a single suture approximating the two ends of the incision, a second suture is placed not more than one-half inch above this. These two sutures, when tied at the same time and held up, bring the anterior wall of the pylorus away from the posterior wall and at the same time make suturing of the wound in the duodenum easier than if only one suture was placed or if the second suture was placed farther up. The second change in technic

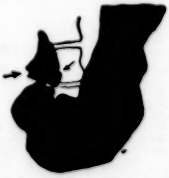

Fig. 5 (Miss E. D. H.).—Tracing from roentgenogram taken shortly before pyloroplasty, which was done July 3, 1918. Arrows show the constant filling defect in the duodenal cap, where there was a duodenal ulcer.

Fig. 6 (Miss E. D. H.).—Tracing from roentgenogram taken Nov. 16, 1918, which shows a perfect duodenal cap. Roentgenogram taken Dec. 5, 1920, shows virtually the same picture. The patient is complaint free. The pylorus seems merely a little wider than it was before the pyloroplasty.

is that the second row of sutures merely approximates the cut edges of the peritoneal and muscular coats. Formerly an effort was made to invert tissue with this row. If this was done, the third row of sutures, also inverting tissue, made too much of a lump. By merely approximating the cut edges with the second row, as in suturing the skin, and inverting the tissues with the third row of sutures, but little of the edges of the incision is turned in and a smoother wound results. A mattress suture of fine tanned catgut is

7. Mayo, W. J., in discussion on article by Dr. Terry (Footnote 3) J. A. M. A. 75: 221 (July 24) 1920.

8. Horsley, J. S.: A New Operation for Duodenal and Gastric Ulcer, J. A. M. A. 73: 575 (Aug. 23) 1919.

placed at the point of greatest tension after the three rows have been inserted, and with the long ends of this the omentum is brought up over the suture line. It should also be emphasized that the teats of tissue at the two ends of the incision after the completion of the second row of sutures should be well turned in by beginning the third row of sutures a long distance from the teat and inverting a considerable quantity of the tissue. The suture then comes nearer the edges of the wound at its middle and again diverges at the upper extremity, turning in a large amount of tissue here.

RESULTS

I have performed twenty-four of these pyloroplasties since the first one in April, 1918. During this time I have performed four gastro-enterostomies, one operation of Judd for duodenal ulcer 1½ inches from the pylorus, and two pylorectomies. All of these operations were for ulcer except two of the gastro-enterostomies, which were for cancer. I believe that this represents about the correct proportion of pyloroplasties to gastro-enterostomies. Of the twenty-four pyloroplasties, three deaths occurred in the first twelve cases. Two of these deaths have been fully discussed in the original communication, and the third death, which was in the twelfth case, resulted from uremia. It was thought that the ulcer was the focus of infection for the nephritis the patient had. He died of uremia five days after the operation. Postmortem examination revealed the stomach and pylorus in excellent condition. Probably none of these deaths would occur at present. There were no deaths in the last half of the series.

Figures 3, 4, 5 and 6 are tracings from roentgenograms of two patients, showing the condition before operation and the normal physiologic stomach resulting from the pyloroplasty.

For the first few months after a pyloroplasty, the results are similar to those after gastro-enterostomy. It is only as the length of time after the operation increases that the advantages of the pyloroplasty begin to appear.

Anthrax and Shaving Brushes.—Because of the continued occurrence of cases of anthrax due to infected shaving brushes, the Public Health Service has issued a circular letter of warning to state and local health authorities and others concerned. It seems that the suggestions made by that service in 1918, recommending the sterilization of all brushes in trade channels, have not been complied with. In order to avoid danger from this source, any brushes which do not bear the name or the trade make of the manufacturer should be regarded with suspicion and returned to the dealer from whom they were purchased, or thoroughly disinfected before use.

TRANSFUSION OF CITRATED BLOOD*

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In view of the fact that transfusions of citrated blood are becoming more and more a common practice, and that the reports of the efficacy of this method indicate that it is one of the most valuable of our therapeutic measures, we have attempted to perfect a simple and satisfactory apparatus.

In order that it may be of value to the physician who performs only an occasional transfusion (such as an emergency might bring forth) the method must be simple, safe and expedient.

In the past, mainly two methods of injection of citrated blood have been used: (1) the gravity method, and (2) the three-way method with syringe. In the gravity method the blood is usually collected from the donor into an open vessel containing a solution of sodium citrate. This is then transferred to another vessel, which is connected to the needle in the patient's vein by means of a long rubber tube. Then by elevating the container the blood is allowed to run into the vein of the recipient by means of its own weight.

The main objections to this method have been the lack of control of injection and the excessive length of tubing necessary to secure the proper amount of gravity. Several observers have suggested that the tubing might be an important factor in the causation of transfusion reactions. Another even greater objection is the danger of contamination from the outside air.

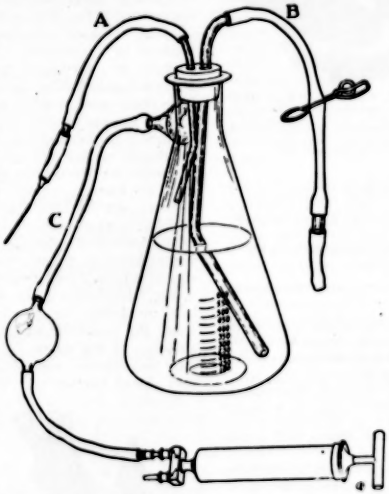

Fig. 1.—Arrangement of apparatus for receiving blood from donor. Note the direction of the arrows on the pump and compare with the direction of arrows in Figure 2. This arrangement produces a partial vacuum within the bottle. A very small amount of vacuum is all that is necessary.

In the three-way method with syringe, the blood is also collected in an open flask. The apparatus consists of two long pieces of rubber tubing connected to a 50 c.c. syringe by means of a Y-shaped glass tube or a three-way stopcock. The free end of one piece of rubber tubing is placed in the flask containing the citrated blood, and the free end of the second rubber tubing is connected to the needle in the recipient's vein. The blood is drawn into the syringe, the tube to the flask is clamped and the tube to the recipient is opened, and the syringe is emptied. This procedure is repeated until the blood is injected. When the three-way stopcock is used, the blood is directed into the proper channel by the turning of the stopcock.

This method has obviated one of the objections to the first or gravity method, namely, that of regulating

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the rate of flow, but again offers the objection that it is impossible to prevent contamination from the outside air. It is clumsy, it requires considerable assistance, and the blood must flow through a large amount of apparatus. Furthermore, the tubes must be long; and if the three-way stopcock is used there is frequently considerable leakage around the valve and the small holes in the cock are very liable to become plugged. One of the greatest annoyances in this method is the tendency for the plunger of the syringe to stick. Forcing the blood through the small holes in the stopcock undoubtedly has a tendency to break down the red cells, and this also may be a factor in the production of reactions.

The apparatus which we have devised, we believe, obviates many of the objections of the methods mentioned above. It is rapid, safe, simple and compact; easily sterilized and cleaned, and eliminates contamination from the outside air. The blood runs through a minimum length of rubber tubing, which is of large caliber. It is quickly collected into a flask containing a solution of sodium citrate. This is done by means of a partial vacuum within the bottle. Then by reversing the syringe the blood is injected into the patient in a uniform, steady stream at any desired rate under positive pressure within the bottle.

Before the apparatus is described, a brief discussion of the preparation of the patient, donor and solutions for the operation would not be amiss. On the morning of the day of transfusion the patient is given a light breakfast and a simple enema. Both donor and recipient are grouped by the Minot modification of the Moss method. A Wassermann test is secured from the donor, and he is asked to report without breakfast. The sodium citrate solution is prepared from a chemically pure product in freshly distilled water. This is a 1.5 per cent. solution, and of this 20 c.c. is used for each 100 c.c. of blood which is to be transfused.

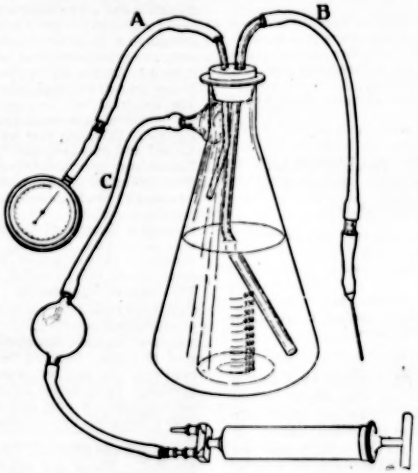

Fig. 2.—Arrangement of apparatus for injecting blood into the recipient. Note the direction of arrows and pump and compare with Figure 1. This arrangement produces positive pressure within the flask. Keeping the manometer between 70 and 100 mm. gives the most satisfactory flow.

DETAILED DESCRIPTION OF APPARATUS

The details of the construction of the apparatus are well shown in the accompanying illustrations. As can be seen, little material is required which the average practitioner does not already have in his equipment.

The reversible pump which we use was secured from a chest aspiration set. The manometer, which is desirable but not absolutely necessary, can be taken from any spring sphygmomanometer, and is of value only in determining pressure within the bottle.

The remainder of the apparatus consists of a liter flask with a small neck and a wide, flat bottom. A filter flask such as is shown in the sketch is satisfactory, but any Erlenmeyer flask may be used. There are two short tubes, *A* and *C*, and one long tube, *B*. The long tube *B* inside the flask should be bent at such an angle that its lower end may extend to the outer edge of the bottom of the flask. This tube aids in mixing the blood with the citrate solution, since the end acts as a fixed point when the flask is gently agitated.

One of the short tubes, *A*, leads from the donor's arm; the second short tube, *C*, is attached to the pump; while through the long tube, *B*, the blood is forced into the vein of the recipient.

Care should be taken that the rubber stopper is well fitted to the bottle and that the glass tubes are well fitted to the holes through which they pass. The small glass bulb inserted in the short tube *C* between the pump and the bottle is filled with sterile cotton. This prevents the injection of particles into the flask.

The amount of sodium citrate solution necessary is measured into a sterile graduate, the tube *B* to the recipient is clamped, and the sodium citrate solution is drawn into the flask through the tube *A* by means of a partial vacuum produced within it. This indicates further whether the pump is applied in the proper manner and will preclude any possibility of injecting air into the donor's vein. At the same time it rinses the receiving tube with a citrate solution, which helps prevent clotting.

To the end of tube *A* a large 16-gage needle is applied. As large a needle as possible should be used, but with our apparatus, on account of the suction, a much smaller one may be used if necessary. The inside of all needles should be carefully polished with Bon Ami or similar preparations preceding sterilization, as we have found that the blood flows much more freely when the needles are so cleaned.

We are using a blood pressure apparatus as a tourniquet on the donor's arm, which is an excellent method for regulating the pressure so as to get the maximum flow of blood. We have found that a pressure slightly lower than the donor's diastolic pressure usually gives the maximum flow of blood.

The needle connected with tube *A* is introduced into the vein of the donor, and at the same time a small amount of suction is applied. As the blood flows, the flask is gently agitated. When the desired amount is obtained, the needle is withdrawn and is immediately placed into a small amount of citrate solution which is drawn up through the tube, thereby cleansing this part of the system. The needle is now removed and the spring manometer is attached in its place.

The pump is now disconnected and reversed (the direction is indicated by arrows in the illustrations). Air is pumped into the flask, forcing the blood through the tube *B* going to the recipient, filling this part of the system. When the air has all been expelled from tube *B* it is clamped, and the needle is inserted into the patient's vein. The clamp is removed and the blood is injected by producing positive pressure in the flask.

The blood should be injected at the rate of 100 c.c. every six minutes, i. e., 500 c.c. in a half hour. The pressure that is necessary to do this depends on the size of the needle used and the pressure within the vein. By the use of the manometer this can be easily determined and subsequently kept at the optimum point. It is usually in the neighborhood of from 70 to 100 mm. of mercury.

After transfusion has been completed, the apparatus can be cleaned by reversing the pump, producing suction and drawing water through both tubes.

We believe that except in cases of great depletion by hemorrhage, small amounts of blood frequently given are preferable to larger amounts given at longer intervals, about 300 to 500 c.c. being the amount usually used.

The advantages of the apparatus are that:

1. It is simple, compact and safe.
2. It is entirely closed and thereby prevents contamination from outside sources.
3. A minimum amount of apparatus is required, and it is easily constructed from instruments in common use.
4. It is easily operated by one person.
5. It provides a uniform, steady flow of blood.
6. The possibilities of accident during manipulation are at a minimum.

The method in our hands has proved to be easier of preparation and much easier of application than other methods.

NOTE.—Since this article was written, we have come across an article by O. H. Robertson[1] in which there is a description of a similar apparatus. We therefore cannot claim priority, although our work was done independently from and in complete ignorance of his. However, there are several additional convenient features on our apparatus which are of definite value.

INTERPRETATION OF WASSERMANN REACTION OF BLOOD SERUM IN MENTAL DISEASES

INDICATIONS FOR ANTISYPHILITIC THERAPY

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The prevailing opinion among medical men that a positive Wassermann reaction of the blood serum always means syphilis, and that therefore immediate antisyphilitic treatment should be instituted, cannot, in the field of mental disease, be always strictly adhered to. While in certain of the psychoses syphilis may be regarded as the definite etiologic factor, by far the greater percentage of cases owe their development to conditions far removed from *Spirochaeta pallida*. In these cases the presence of a positive blood Wassermann reaction is indicative of syphilis simply as an incidental condition in no wise contributing to the mental disorder, and hence, so far as the psychosis is concerned, does not demand antisyphilitic therapy.

In order definitely to establish a guide for the treatment of mental diseases in which there is a positive Wassermann reaction of the blood serum, from the patients now under treatment at the State Hospital for the Insane, we have selected groups of cases illustrating each of the foregoing types, and have outlined the indications as to treatment in each group.

That all controversy may be eliminated in the matter of case selection and reliability of serologic findings, the cases noted have been taken from our routine admissions and the laboratory findings have been interpreted by a competent pathologist.

From the standpoint of syphilis as the exciting cause of mental diseases, individual cases fall most naturally into one of two groups: (1) cases which, while showing a strongly positive Wassermann reaction of the blood serum, do not present clinical, neurologic or spinal fluid serologic evidences of neurosyphilis: (2) cases which, irrespective of the Wassermann reaction of the blood serum, show clinical, neurologic and spinal fluid serologic signs of syphilis of the central nervous system.

In Group 1 should be placed three types of cases: (*a*) psychoses in which syphilitic infection antedates the development of mental disease; (*b*) psychoses in which the mental disease antedates the syphilitic infection, and (*c*) epilepsy, mental deficiency and psychopathic constitutional inferiority, with syphilitic infection either hereditary or acquired.

CASES IN GROUP 1

CASE 1.—*Psychosis in which syphilitic infection antedated the development of mental disease.*—F. B., a woman, aged 29, in whose family there was alcoholism on the maternal side, was of average mentality as a child, but was inclined to be incorrigible and emotionally unstable. At puberty she showed signs of moral imbecility. At the age of 15 she gave birth to an illegitimate child. She married at 17, had a miscarriage shortly afterward, and there were no subsequent pregnancies. Divorced at 23, she married again at 27, and had been living with her present husband only a few months.

The condition had been of a few months' duration, and these symptoms were present:

Psychic: Delusions that were mobile, absurd, loosely systematized and paranoid, having their foundation on auditory hallucinations; general emotional indifference with morbid irritability; defective judgment, but no intellectual enfeeblement.

Neurologic: Patellar reflexes slightly decreased but equal. Otherwise negative.

Physical: Cicatrix of the anterior surface of the left leg just below the knee, the site of an old syphilitic ulcer.

Serologic: Blood serum Wassermann reaction, strongly positive; spinal fluid, negative.

The diagnosis was: dementia praecox with syphilis.

CASE 2.—*Psychosis in which the mental disease antedated the syphilitic infection.*—F. E., a woman, aged 40, whose family history was negative, was first admitted to the hospital at the age of 15 years. She had been furloughed and readmitted seven times. On each admission the symptoms were:

Psychic: Psychomotor excitement; flight of ideas; emotional exaltation; morbid euphoria and irritability; erotic tendencies; delusions of an unfixed, unsystematized expansive type.

Neurologic and Physical: Negative.

Serologic: Blood and spinal fluid, negative. During the interval preceding her present admission, which extended over a period of eleven years, she married, gave birth to one child, and on her return to the hospital presented the same psychic, clinical and neurologic picture, to which had been added a strongly positive Wassermann reaction of the blood serum.

The diagnosis was: manic-depressive insanity of the manic type.

CASE 3.—*Epilepsy, mental deficiency and psychopathic constitutional inferiority, with syphilitic infection either hereditary or acquired.*—F. H., a man, aged 35, in whose family there was mental disease on the maternal side, and of whose early life no accurate history was obtainable, received a common school education and is said to have been epileptic for a number of years. He was addicted to the excessive use of alcohol and had syphilitic infection. Eighteen months previous to admission, he was said to have suffered from malarial fever, which was followed by a condition of emotional depression persisting for several months. During this period, there was a gradual alteration in the conduct of the patient with marked accentuation of the epileptic make-up, and three weeks previous to admission, he became hyperactive, and showed flight of ideas and emotional excitement, together with delusions of somewhat expansive and unsystematized nature. He became destructive to furniture and clothing, and was homicidal.

The patient showed the typical mental make-up of an epileptic. He suffered from epileptic convulsions which were grand mal in type, severe in character, and occasionally fol-

1. Robertson, O. H.: Brit. M. J. 1:477 (April 27) 1918.

lowed by periods of excitement and confusion. The Wassermann reaction of the blood serum was + +. Other findings were negative. The diagnosis was: epileptic psychosis.

The foregoing cases are illustrative of quite a large group of patients continually being received into the hospitals for the insane and in which syphilis is given by the committing physician as the cause of the psychosis, so that relatives and friends are often led to believe that recovery from the mental disorder will follow antisyphilitic treatment. Nothing could be more erroneous. These patients may suffer from general systemic syphilis, but they do not have neurosyphilis, for syphilis of the central nervous system gives definite neurologic signs and, as a rule, definite spinal fluid reactions; hence the fallacy of hope of antisyphilitic treatment accomplishing anything so far as psychic manifestations are concerned. The patient presenting a distinct history of syphilitic infection, together with the clinical evidences of systemic syphilis and a positive blood Wassermann reaction, should receive antisyphilitic therapy; but a positive blood Wassermann reaction alone does not indicate antisyphilitic treatment, nor should one expect from it any great mental improvement in these types of cases.

CASES IN GROUP 2

In the group of cases in which, irrespective of the Wassermann reaction of the blood serum, there are clinical, neurologic and spinal fluid serologic signs of syphilis of the central nervous system, should be placed these two types: (*a*) psychoses in which syphilitic infection is limited to the vascular and meningovascular processes of the brain and spinal cord, and presenting the neurologic and spinal fluid serologic evidences of cerebral, cerebrospinal or spinal syphilis, and (*b*) diseases of the brain and spinal cord in which syphilitic infection has involved the parenchyma of these organs and showing the neurologic and spinal fluid serologic signs of paresis or tabes dorsalis.

CASE 4.—*Psychosis in which syphilitic infection is limited to the vascular and meningovascular processes of the brain and spinal cord, and presenting the neurologic and spinal fluid serologic evidences of cerebral, cerebrospinal or spinal syphilis.*—J. F., a man, aged 58, in whose family there was the history of psychosis on the maternal side, was admitted with the history of mental disorder extending over a period of two years, beginning with a convulsion followed by coma, edema of the lower extremities and paralysis of the right arm. Partial restoration of functions took place fairly promptly, but mental symptoms appeared and gradually progressed. Syphilitic infection was positively denied.

These symptoms were present:

Psychic: General mental retardation and slowing of thought processes; temporal disorientation; inadequate perception; both anterograde and retrograde amnesia, and emotional indifference with mild delusions of a mobile and somewhat expansive type; personality fairly well preserved with moderate degree of insight.

Physical and Neurologic: General physical enfeeblement; cardiac hypertrophy; systolic murmur at apex transmitted toward the axilla. Blood pressure; systolic, 210 mm.; diastolic, 176 mm.; spinal fluid pressure, 26 mm. Pupils equal, reacting normally to light and accommodation; patellar reflexes unequal, right exaggerated. Speech slow and slurring; impairment of muscular coordination of the upper extremities. Hand grips unequal, right markedly weakened. Impairment of motion of right leg.

Serologic: Blood Wassermann reaction, negative; spinal fluid Wassermann reaction, strongly positive.

The diagnosis was: cerebral syphilis of endarteritic type.

CASE 5.—*Disease of the brain and spinal cord in which syphilitic infection involved the parenchyma of these organs and showing the neurologic and spinal fluid serologic signs of paresis.*—F. C., a man, aged 55, whose family history was unobtainable and the data of his personal history unreliable, was an Austrian laborer addicted to the excessive use of alcohol until about one year previous to admission. Venereal diseases were denied. Mental symptoms were first noticed four weeks prior to admission. The patient complained of facial neuralgia, became confused, and was incoherent in conversation, delusional and assaultive. On advise of his physician, all his teeth were extracted without benefit. He was committed after attempting to kill his wife.

The symptoms present were:

Psychic: General intellectual enfeeblement with emotional disturbances and delusions of a changeable nature somewhat expansive and paranoid in type.

Neurologic: Speech defect, reduplication of syllables in test phrases; sluggish reaction of pupils to light; positive Romberg's sign; incoordination of muscles of upper extremities; tremors of hands; absence of patellar reflexes.

Serologic: Blood Wassermann test, negative; spinal fluid Wassermann test, positive.

The diagnosis was: general paresis.

The second group of cases presents a great stumbling block to the neurologist and psychiatrist. The etiologic factor is identical in each type, but anatomically the location of the lesion is markedly different. In cerebral, cerebrospinal and spinal syphilis, we are dealing with active specific lesions of the meningovascular structures of the brain and spinal cord, while in paresis and tabes dorsalis, the spirochete has invaded structures far removed from the vascular channels; the parenchyma of the brain and cord have become involved, and nerve cells and communicating fibers have been destroyed.

The success of treatment of these conditions depends on the ability to reach the foci of infection, destroy the invading spirochete and repair the damage done to invaded structures. In parenchymatous syphilis of the central nervous system this is impossible, for the walls of the capillaries offer decided obstruction to the entrance into the pericapillary and perineuronal spaces of the ions of metals of which recognized antisyphilitic agents consist; and, irrespective of the method of administration, these therapeutic remedies fail to reach the foci of infection, and hence parasyphilis of the nervous system presents a hopeless prognosis. It should be borne in mind that in tabes dorsalis and general paresis there is a natural tendency on the part of the disease to stay its progress for a time in occasional cases. These periods of remission are often mistaken for results obtained from treatment. It has been the experience, however, of one of us (H. V. P.), in more than fifty cases of parenchymatous neurosyphilis in which intensive treatment was given by arsphenamin administered intravenously, intraspinally and intraventricularly, supplemented by mercury and the iodids, that no lasting results were obtained from the treatment, and that each patient finally succumbed to the disease.

Theoretically, meningovascular neurosyphilis should present a good possibility of cure; and results of antisyphilitic therapy in cerebral, cerebrospinal and spinal syphilis bear out this theory, and in these cases antisyphiltic treatment should be pushed to the limit. The discouraging feature of many of these cases, however, is the fact that when these patients are first seen by the neurologist and psychiatrist, the disease has reached the stage in which the rôle of syphilis exists in the past so far as treatment is concerned, and hence in many instances, while the progress of the disease is stayed, a cure cannot be effected.

CONCLUSIONS

1. A positive Wassermann reaction of the blood serum alone indicates nothing further than that the individual has come in some manner in contact with syphilis, either hereditary or acquired. It does not mean that the mental disorder from which he suffers is due to syphilis.

2. A diagnosis of neurosyphilis should be based on definite neurologic signs and spinal fluid reactions, irrespective of the readings of the blood serum.

3. Psychoses in which there is a positive Wassermann reaction of the blood serum, but showing no other serologic, neurologic or clinical evidences of syphilis do not demand antisyphilitic treatment for the reason that such treatment will not modify the mental condition; furthermore, neurosyphilis is seldom, if ever, superimposed on a well developed psychosis.

4. General systemic syphilis as shown by a history of infection, clinical signs and positive Wassermann reaction of the blood serum should be treated as such, but not with the view of favorably influencing the psychosis.

5. Antisyphilitic treatment avails nothing in well advanced cases of general paresis or tabes dorsalis.

6. Cerebral, cerebrospinal and spinal syphilis are amenable to treatment and antisyphilitic therapy should be pushed to the limit.

7. Successful treatment of neurosyphilis resolves itself into the early recognition and therapeusis of the infection, and lies largely in the hands of the general practitioner and syphilographer; all syphilitics should be kept under routine observation for a period of at least ten years in order that vigorous treatment may be instituted at the first signs of involvement of the central nervous system.

EXPERIMENTAL TRANSMISSION OF YELLOW FEVER

CASES OCCURRING IN VERA CRUZ IN 1920, TOGETHER WITH THE ISOLATION OF LEPTOSPIRA ICTEROIDES

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During July, 1920, the special commission appointed to conduct an antiplague campaign in Vera Cruz received information that some cases of yellow fever had appeared in that port. The continued absence of yellow fever from the city for many years, and the presence in recent years of malaria, made it seem desirable to the head of the commission, Dr. D. Octaviano González Fabela, to secure bacteriologic proof that the disease was yellow fever. The clinical evidence was without doubt in favor of that disease, and the recent work of Dr. Noguchi,[1] of the Rockefeller Institute in New York, made us hopeful that such a bacteriologic investigation might be of interest with regard to the etiologic relation of *Leptospira icteroides* to yellow fever.

A party was formed, consisting of Dr. González Fabela, as head, Dr. Julián González Méndez, and myself, the latter as bacteriologist of the committee. I began by making intraperitoneal inoculations with the blood from patients into guinea-pigs of various sizes, which were then observed very carefully. A little later Dr. Julián González Méndez and I continued the investigations, which finally resulted in the isolation and cultivation of *Leptospira icteroides* of Noguchi and in its confirmation as the etiologic agent of yellow fever.

The most significant of these early experiments are to form the substance of this paper. In only two cases out of the fourteen studied was transmission to guinea-pigs successful. Later, by injecting larger quantities of blood and using young guinea-pigs, rendered more susceptible to inoculation, the number of transmissions was larger (as many as three guinea-pigs becoming infected out of seven inoculated), but the clinical characteristics and temperature curves differed in no way from those of the early experiments reported here. The later experiments will be recorded in a separate paper.

A greater part of the work, and especially the clinical part, has been done in collaboration with Mr. Mauro Loyo, and later with that of Dr. Juan Solórzano Morfín, Dr. Carlos Rodriguez Mendoza, and Dr. Alfredo Iglesias. I wish to express here my gratitude to these gentlemen and also to Dr. Malda and Dr. Pruneda, the president and secretary, respectively, of the Departamento de Salubridad General de la República, and to Dr. Graham Casasús, the chief of the yellow fever commission.

The experiments are recorded under the heads: (1) transmission of yellow fever to the guinea-pig; (2) passage of yellow fever in the guinea-pig; (3) reproduction of yellow fever in guinea-pigs by means of cultures.

CERTAIN CHARACTERISTICS OF YELLOW FEVER

Although the symptoms and the anatomic and pathologic lesions of yellow fever are well known, I desire to emphasize a few points. Yellow fever is unique in presenting such marked analogy in species so widely separated as man and the guinea-pig. Moreover, there are some lesions encountered by Pareja and Noguchi with great frequency in the Guayaquil epidemic which have been seldom observed by Vera Cruz physicians, at least, in the present epidemic. The following notes are not presented as the last word on the subject; on the contrary, it is to be hoped that a more profound study of the disease, especially in its mild forms, such as are usual in children, will modify and complete these data in such a way as to make possible the diagnosis of types of yellow fever which today pass unnoticed.

The most characteristic and constant symptoms, both in man and in the guinea-pig, are fever, icterus, hemorrhages and urinary disturbances. The onset of fever is sometimes accompanied by intense chills, simulating the chills of malaria, but frequently there is a rise in temperature without any previous disturbances of any kind; especially is this true in children. As a rule the temperature is higher during the first days, reaching sometimes 40 C. (104 F.) or more, but there are mild ambulatory forms, which I believe to be more frequent than is generally supposed, in which it does not pass 37.5 to 38 C. (from 99.5 to 100.4 F.). These forms, as I have said, are extraordinarily frequent in children; indeed, children are often not sick enough to be kept in bed, and diagnosis in such cases is so difficult that yellow fever is not suspected, and sick persons are allowed to go about unrestricted and thus spread the disease. Such attacks are nevertheless sufficient to establish a more or less lasting immunity. The fever tends to diminish after the third day; in the present

1. Noguchi, Hideyo: J. Exper. Med. **29**: 547, 565, 585 (June) 1919; **30**: 1, 9, 13, 87, 95 (Aug.) 1919; **30**: 401 (Oct.) 1919; **31**: 135, 159 (Feb.) 1920; **32**: 381 (Oct.) 1920.

epidemic in Vera Cruz, however, this fall in temperature has not had any relation to the severity of the disease, as French authors have for some years stated. Frequently, after the sixth or seventh day of the disease, there is hypothermia, the temperature gradually falling until death. This phenomenon has also been observed in the guinea-pig by Dr. García Rendón. Indeed, it will be found by comparison of the temperature curves in guinea-pigs that they have the same characteristics as those in man. Jaundice is intense, as a rule, and appears at the earliest on the third or fourth day of illness, increasing rapidly for a few days and disappearing slowly. In some cases jaundice is very slight, and no definite relation can be said to exist between the intensity of jaundice and the severity of the disease. On the other hand, bile pigments can be found in considerable quantity in the urine and in the organs in all cases of yellow fever. The duration of jaundice is difficult to determine: in some cases the pigmentation of the skin and urine lasts for four to five weeks, in some jaundice disappears within seven to ten days after the onset of fever. In summary, it may be said that only in the very mild cases can any relation between fever and icterus and the degree of severity of disease be demonstrated; in severe cases neither the one nor the other has any relation to severity.

Hemorrhages are constant: in the lung they occur in the form of small areas of extravasation; in the stomach and small intestine, hemorrhages are at times so abundant as to fill the entire cavity and produce melena and the classic symptom of black vomit; the last is not so frequent as might be supposed. In the liver, hemorrhages are regularly less abundant and are found around the vessels. Hemorrhages of the large intestine and kidney are less common, but the latter occasionally presents large infarcts. Epistaxis and subcutaneous hemorrhages are encountered rarely; the latter has been observed in the guinea-pig by Dr. García Rendón.

Urinary disturbances are also constant. During the first days of illness the urine diminishes in quantity, particularly from the third to the fourth day, and more in severe than in mild cases, although in the latter the amount of urine secreted may not be more than from 200 to 300 c.c. It may be said that this symptom bears a relation to the severity of the disease. In patients who recover, the urine approximates the normal from the second week, the increase to normal being either gradual or in the form of a polyuric crisis. Albumin appears in the urine from the third to the fourth day, has a tendency to increase during the two or three days following, and then diminishes until its complete disappearance, sometimes within from three to four weeks. The increase in albumin varies in different patients, sometimes being intense in a mild case and slight in a severe case. During the present epidemic in Vera Cruz, patients have been observed in whose urine albumin could be found in small quantity only on one day, merely a trace being present two or three days later.

Of the pathologic and anatomic lesions, those of the liver and kidney are characteristic. The fatty degeneration of the liver is early and extensive, varying, of course, with the duration of the disease and its severity. I wish to note here that neither in patients nor in guinea-pigs have the Vera Cruz physicians found the abundance of necrotic areas described by Pareja and Noguchi in yellow fever in Guayaquil. In the kidneys the glomeruli are more or less congested, the epithelia of the contorted renal tubules always show degeneration in the cytoplasm, and the lumina are filled with hyaline and granular casts; occasionally there are hemorrhagic infarcts. I have already mentioned the almost constant presence of hemorrhagic areas in the lungs.

TRANSMISSION OF YELLOW FEVER TO THE GUINEA-PIG

The first experiments comprised fourteen guinea-pigs, inoculated intraperitoneally with blood of yellow fever patients taken directly from the vein on the second or third day of illness. The amount of blood injected into the guinea-pigs varied from 1 to 3 c.c. The animals were isolated in small cages protected by a fine metallic mesh and carefully observed from twenty-five to thirty days, temperatures being taken morning and afternoon. Of these fourteen guinea-pigs, two, Nos. 9 and 14, became infected. As I have already said, we later secured a larger percentage of positive transmissions by rendering the guinea-pigs susceptible by underfeeding, increasing the quantity of blood injected, choosing young animals, etc.

The first guinea-pig in which we succeeded in inducing yellow fever, No. 9, was inoculated with blood from the patient Leandro López, a native of Ixtlán, Nayarit, 20 years old. The patient was admitted to the hospital (Aquiles Serdán), July 20, 1920, on the third day of illness. He was discharged, recovered, August 6. There was albumin on the second day, and rather marked icterus appeared on the third day. When discharged the patient still showed slight jaundice, but there was no albumin present and had been none for a week previous to discharge.

Guinea-Pig 9, black and yellow, had a slight rise of temperature on the day following inoculation, but the temperature remained within normal limits for the following two days, the animal appearing well. At the end of the fourth day the animal had intense initial chill, and the temperature rose abruptly to 40 C., remaining high during three days (39.5 C. with fluctuations below this point). The temperature became normal on the fifth and sixth days of the disease, was 39.6 in the afternoon of July 29, and then gradually fell until the time of death. This animal was not used for inoculating culture mediums or for making passage to other animals during the early days of disease, but a few hours before death we inoculated two guinea-pigs and set up cultures with Noguchi's special medium, without, however, obtaining any positive results. Slight icterus appeared on the fourth day of illness, and melena on the fifth day. During the early days the animal ate well, and the urine passed during a twenty-four hour period was normal in amount; for three days preceding death, however, when the temperature was going down, there was anorexia, and the quantity of urine was diminished.

Necropsy revealed the typical lesions of yellow fever. The liver was somewhat yellowish and very friable. The lungs contained abundant punctiform hemorrhages, and the intestine and stomach profuse hemorrhages. The skin and viscera were mildly jaundiced. The total duration of the disease in this animal, from inoculation until death, was eleven days.

The second positive transmission was obtained in Guinea-Pig 14, inoculated intraperitoneally, July 27, with 2.5 c.c. of blood taken from the vein of patient Casimiro García on the second day of his illness.

In Guinea-Pig 14, as in Guinea-Pig 9, there was a rise in temperature on the day following the inoculation. This rise in temperature has been found to occur in all instances in which human blood was inoculated, and is due, we believe, to its absorption. The temperature was normal from the third day after inoculation until the afternoon of the fifth day, when there was an abrupt rise without initial chill, as in the case of the preceding guinea-pig. The temperature rose slightly on the following day, and on the next, the seventh day after inoculation; it began to fall the afternoon of the seventh day and continued slowly dropping until the day before death, when there was a slight rise. Jaundice appeared during the fourth day of the disease. It was first slight, and then rapidly increased as the temperature fell. At the time

of death the animal was intensely yellow; the skin, mucous membranes, and especially the conjunctivae, were deeply jaundiced. Like the first guinea-pig, this animal ate well, notwithstanding the fever, until the time of appearance of jaundice; the amount of urine diminished rapidly from the same day, and melena appeared almost simultaneously. Death occurred on the seventh day of illness.

At necropsy there was intense jaundice of the skin and organs, particularly the liver, which was small and greenish yellow. The stomach was completely distended with blood, as were also the small intestine and kidneys. There were also abundant hemorrhagic areas in the lungs. Sections of the liver showed fatty degeneration of all the cellular elements, especially in the vicinity of the blood vessels. There was also marked fatty degeneration of the kidneys; the glomerular capsules were vacuolated and the renal tubules full of casts.

The total duration of illness in this animal was eleven days, of which four days comprised the period of incubation. At the time when we noticed icterus, that is, on the fourth day of the disease, I took 2 c.c. of blood from the heart for inoculation into another guinea-pig and for setting up cultures in the Noguchi medium, as well as in a medium containing less agar. Positive results were obtained both in the animal inoculation and in the cultures.

PASSAGE OF YELLOW FEVER IN GUINEA-PIGS

Once the experimental disease had been induced in the guinea-pig, the preservation of the virus through successive passages in the same animal was assured.

Guinea-Pig 14 was bled, Aug. 3, 1920, and 0.25 c.c. of the heart blood inoculated intraperitoneally into another guinea-pig. Dark-field examination of the blood was negative. As in the previous animals, the temperature rose slightly immediately after the inoculation for a short period. At the end of the third day the temperature was slightly below normal, and the animal had a mild chill. The temperature began to rise on the fourth day, reaching its maximum in the morning of the fifth day, and then descending rapidly until death, which occurred on the seventh day after inoculation. Jaundice appeared almost suddenly on the sixth day, and was accompanied by loss of appetite and complete suppression of the urine. The skin was olive green, and the conjunctivae were intensely yellow. The animal, with hair ruffled, remained huddled in the corner of the cage from the time when the temperature began to rise.

The animal was bled from the heart, and the blood used for inoculation of another guinea-pig and for cultivation. This blood showed numerous leptospiras when examined under the dark-field microscope, as did also film preparations of liver and spleen. Necropsy revealed, besides the lesions already described in other animals, intense icterus of the organs.

Aug. 9, 1920, a third guinea-pig of this series was inoculated with 0.25 c.c. of blood from the second guinea-pig, drawn immediately after death from the heart. As in all the previous animals, there was a slight rise in temperature on the day following inoculation, and a very pronounced rise on the first day of disease (after an incubation period of three and one-half days). It remained high (41.1 C.), with fluctuations downward, until the third day of disease, when jaundice and abundant melena appeared; then it fell to below normal and continued to fall during the days preceding death, which occurred on the fifth day of the illness. It is evident that death in hypothermia is frequent, at least in animals. Necropsy revealed extensive hemorrhages, especially in the large intestine.

The animal was bled from the heart the day before the appearance of jaundice, and the blood inoculated into two other guinea-pigs and also into culture mediums. Examination of the blood under the dark-field microscope was negative.

Of the two guinea-pigs comprising this fourth passage, one was sent to the Instituto Bacteriológico in Mexico City, where the series is being continued. The symptoms and lesions of these two animals were identical with those of previous passages. In the animal which was kept in Vera Cruz, we observed for the first time the epistaxis described by Noguchi.

REPRODUCTION OF YELLOW FEVER IN GUINEA-PIGS BY MEANS OF CULTURES

Aug. 19, 1920, a small guinea-pig was inoculated intraperitoneally with 0.25 c.c. of culture of *Leptospira icteroides*. There was no initial rise of temperature immediately after inoculation as in the case of animals inoculated with blood from human cases or from other guinea-pigs. At the end of the second day the temperature fell slightly, but subsequently rose to 39.1 C. It then fell and continued to fall until death, on the second day of illness. Microscopic examination of the blood of this animal revealed the presence of *Leptospira icteroides* in large numbers, as did also films of the liver and kidneys. Pure cultures of the organism were obtained in this instance.

September 8, another guinea-pig was intraperitoneally inoculated with a culture of *Leptospira icteroides* 20 days old. This was the first animal in which we observed a daily intermittent type of fever with morning paroxysm. This type of temperature curve shows the impossibility of making a diagnosis of the disease from the temperature curve alone. Jaundice appeared on the third day of illness and increased until the time of death. The pathologic lesions were identical with those of the previous experimental animals, and the blood and smears of the viscera contained numerous organisms. Pure cultures were obtained.

The same culture inoculated in the foregoing experiment was used for inoculation into another guinea-pig, September 20, that is, twelve days later, when the culture was 5 weeks old. The object of this experiment was to determine whether there was any change in the virulence of the culture, and whether the same type of remittent fever would be induced. The temperature curve, however, was analogous to that described in previous inoculated animals, and the virulence of the culture proved to have been undiminished. Jaundice appeared on the third day of illness, and death occurred on the fifth day. The lesions were identical with the others already described.

CONCLUSIONS

Yellow fever has been transmitted experimentally to the guinea-pig by injecting intraperitoneally the blood of patients taken during the third or fourth day of illness.

Pure cultures of *Leptospira icteroides* have been obtained with the blood either from yellow fever patients or experimentally infected guinea-pigs, by using the culture medium and technic described by Noguchi. The organism isolated in Vera Cruz has the same characteristics as that isolated by Noguchi in Guayaquil.

The experimental disease has been transmitted in indefinite series by means of inoculations in the manner described in this paper. The passage of the leptospira through the guinea-pig enhanced its virulence for this animal, and the period of incubation and the duration of the disease has been markedly shortened by passages.

The cultures of the organism are pathogenic for the guinea-pig, and the disease is reproduced by means of cultures with all its characteristics.

Up to the present time we have not had a single guinea-pig which recovered, perhaps owing to the fact that the cultures used were not old enough. The experimental disease induced in the guinea-pig is analogous in its symptoms and lesions with the natural disease in man. It is rare that an experimental disease is so similar to the natural disease.

Subsequent experiments, in which positive transmission was obtained in three out of seven cases by using young guinea-pigs rendered susceptible by underfeed-

ing just previous to the injection of blood and by injecting a large quantity of blood (from 2 to 3 c.c. in most instances), will be reported later. Fatigue also renders the guinea-pig more susceptible to infection.

STOOLS AND THEIR RELATION TO THE FEEDING IN INFANTS*

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Stools are best examined in the napkins in which they are passed. When the napkin is unfolded, the consistency can readily be observed. Unless the stool is very firm, it will adhere to the napkin when unfolded, exposing the central portion. If the stool is firm, a wooden tongue depressor may be passed through it in order to expose the central portion.

NUMBER OF STOOLS

Breast-fed babies usually have from two to four stools a day. Bottle-fed babies have one or two, and a great many would skip a day if not for a laxative. As a rule, the number of stools varies with the consistency. If there is one stool a day it is usually formed, and if there are three or more, they are likely to be soft or even watery.

Frequent stools are simply the result of increased peristalsis. When fecal matter of an irritating variety enters the intestine, peristalsis is at once speeded up in order to discharge the irritating material. If a stool is acid or alkaline enough to excoriate the buttocks, it will also undoubtedly inflame the mucous membrane of the large intestine. This often happens in the fermentative type of indigestion.

The presence of casein curds in the intestine may also cause increased peristalsis. The curds are often large and tough, and act as foreign bodies. I recently saw a baby that was on a formula containing 1 per cent. of fat and 2 per cent. of protein. The stools were frequent and consisted of large casein curds and mucus with a little soap. When the ingredients of the formula were boiled, with no other change, the curds disappeared and the number of stools immediately returned to normal.

When the intestinal mucous membrane is irritated, there is invariably produced for protection, as in the case of any other mucous membrane, an abnormal quantity of mucus. The cause of the increase in peristalsis being the same as for the increase of mucus, we usually observe mucus in all frequent movements.

REACTION

Infant stools are usually acid. The best way to test the reaction is to place a bit of litmus paper on the moist stool. As the paper gathers moisture, the blue litmus becomes pink if the stool is acid, and the red turns blue if alkaline. If the stool is dry a drop of water may be placed on a smooth part of it and the litmus paper applied. Most stools are acid because of the greater proportion of fat and carbohydrate to protein in the food. If the food contains little fat and sugar and much protein, as in skimmed milk, the stool is usually alkaline. Breast milk stools are almost always acid. So nearly neutral are most well digested cow's milk stools, that it is difficult to determine the reaction with litmus paper.

As urine is usually present on the same napkin as the stool, care must be taken to test the reaction of the stool and not that of the urine. For this reason the central portion of the stool should be selected.

THE STARVATION STOOL

Starvation stools are small, usually few, sticky, and very dark. They are composed mostly of detritus, bacteria and mucus, and are very dark because of the concentration of the bile pigments. They appear smooth and shiny when spread out. Starvation stools are the result of too little food material entering the small intestine, owing to either the nature of the food, vomiting, or inability to swallow enough food. It is a sign of insufficient feeding rather than of indigestion. Meconium corresponds so closely to the starvation stool, both as to cause and appearance, that it ought to come under the same caption.

HIGH PROTEIN STOOL

The high protein stool is the result of a small proportion of fat and a high proportion of protein in the food rather than of too much protein, and is not a mark of an indigestion. Its most characteristic feature is the shiny surface produced when the tongue depressor is passed through it. This shine must be differentiated from the glistening appearance of mucus, and also from the natural moisture of all freshly passed stools due to their watery content. The high protein stool is dull on the outside where the napkin rests against it. The most typical high protein stools are produced from feedings of fat-free milk, undiluted, and boiled hard for three minutes. When passed, they are semiformed and often watery. They dry out rapidly, producing the characteristic appearance. They usually number from two to five a day. They are always a shade of olive green, either a little yellowish or brownish. On fat-free lactic acid milk, the stools are usually some light shade of brown.

The high protein stools, besides showing the gloss, are very smooth when rubbed out with the tongue depressor. They are particularly homogeneous in appearance. They also appear to be transparent, the nap of the cloth being visible through the thin part of the stool. The consistency is very similar to that of cold petrolatum.

If a baby has a diarrhea and is fed boiled, fat-free milk, the typical high protein stool is usually passed. If the diarrhea were of the infectious type or due to a severe fermentation, the stools would continue to be watery, with mucus and possibly blood. A high protein stool would almost positively rule out a diarrhea of an infectious nature. It would tend to show that the loose stools were originally due to a mild fat or carbohydrate indigestion or else some parenteral disturbance. High protein stools on a fat-free milk diet are a sign of a healthy rather than a diseased intestine, and in the great majority of cases a small amount of fat can be given without causing any disturbance.

If the food contains a little fat and a great deal of protein, the stool will lose the characteristic olive green and the transparency, the smoothness and gloss remaining. A small amount of fat in the food will render the stool opaque and grayish; but if a fair amount of protein is present, the gloss will remain. This glossy appearance when the stool is spread out is due to a preponderance of protein matter over that of fat. By

* From the outpatient department of the Children's Hospital.
* Read before the New England Pediatric Society, Nov. 12, 1920.

protein matter is meant the solid particles left in the stool derived from the protein in the food. As the fat is increased and the protein decreased, a point is reached when the stool loses the gloss and becomes dull when spread out with the stick. The dull stool is the soap stool.

CASEIN CURDS

Cow's milk casein coagulates in the infant's stomach into masses that vary in size from a pea to a hen's egg and even larger. Boiling virtually prevents their formation. Barley water, lime water or sodium citrate may also prevent their formation to some extent. When the curds are formed, fat and a little carbohydrate are enclosed in their meshes. The curds are digested slowly in the intestine, some being so large and tough that they do not have time to become wholly digested before they are expelled with a stool.

Casein curds are colored on the outside like the rest of the stool. When they are picked out and rolled with the tongue depressor on the napkin, the color rubs off and the central portion is found to be clear white. If the baby is fed unboiled fat-free milk, the stool will often consist of casein curds and mucus, the mucus being caused presumably from irritation. If the fat-free milk has been boiled, the stool will be of the high protein type described above. Casein curds are rarely found in a high protein stool. If uncooked whole milk or dilutions of whole milk are fed, the casein curds are found embedded in stools composed mostly of soaps.

Casein curds are frequently found in the last stages of digestion. This happens when the curd has become almost disintegrated in the intestine. It is found as a small, slimy, yellowish mass resembling mucus, and when burned smells like keratin. They usually occur in stools in which typical casein curds are found, but sometimes they are found alone. If a stool with casein curds remains in a warm room, the curds are apt to disintegrate and digest themselves, leaving slimy masses.

The casein in breast milk does not form casein curds, both because of the small amount of casein, and also because of the ability of the baby to take better care of the human variety of casein.

SOAP STOOLS

Fat is taken by the baby as neutral fat. This is broken down into fatty acids which unite with bases, readily accessible in the intestine, forming soaps. The form of fat when absorbed by the intestine is soaps and possibly also fatty acids. The intestine absorbs most of these fatty acids and soaps, but a small proportion passes out as a stool. Theoretically, if a baby takes nothing but fat in the food, he ought to pass stools containing nothing but soaps. As a matter of fact, when the baby is fed on a formula containing from 2.5 to 3 per cent. of fat and 1 per cent. or less of protein, practically nothing is found in the stools but soaps when examined with the low power of the microscope. Detritus, bacteria, salt crystals and matter from the intestinal secretions is either so small in amount or so finely divided that it forms an inconsiderable factor in the low power field. The protein matter in a soap stool and in the high protein stool appears as irregular masses, not resembling bacteria, detritus or crystals, and of various colors—yellow, green and brown.

If some carbohydrate is added to the fat, the carbohydrate will be digested and absorbed and add nothing to the stool. Again, theoretically, if a little protein is added to the food (for example, 0.25 per cent, and cooked to prevent curd formation), it will be digested and mostly absorbed because the baby needs it to sustain life. So little will be left that when a bit of the stool is heated with acetic acid and sudan III stain, nothing is seen in the field but fatty acid globules formed from the soaps. Very little other solid matter is visible with the low power. As more and more protein is added to the food, we finally come to the point at which an excess over what the body needs is found in the stools. This is represented mostly on the slide as the part of the solid matter that does not break down into globules with heat and acetic acid.

I shall assume that the normal soap stool contains soaps and protein matter, the proportion varying with the relative amount of fat and protein in the food. If the fat in the formula is high and the protein low, we shall get a typical soap stool, provided there is no indigestion. Such a soap stool is formed and of very light color. They are usually dry and constipated. Some are so dry and white that they resemble the stool of a dog that has been eating bones. Soap stools rarely number more than two a day. They are acid in reaction, sometimes almost neutral. When spread out they appear smooth and dull. On microscopic examination, no neutral fat or fatty acids are found; but on being heated with acetic acid, almost every particle of solid matter is found to be changed to globules of fatty acids, formed from the soaps. As the protein in the food is increased and the fat decreased, there will be found more and more solid matter on the slide that will not break down with heat and acetic acid. This raises the question of the value of the microscopic examination of the stool for soaps. It has usually been considered that when the microscopic field was "loaded" with globules, i. e., virtually all the solid matter changed to globules of fatty acids, the baby was not taking care of the fat very well, or might be on the edge of an acute exacerbation of a chronic fat intolerance. If the baby were taking a formula composed of 3 per cent. of fat and 1 per cent. of protein, we should expect to find little else besides soaps in the stool. If the fat in the food should be kept at 3 per cent. and the protein raised to 2.5 per cent., we should get a different picture microscopically. We should find that only one third or one half of the solid matter was changed to globules, the remaining solid matter being derived from the protein in the food. Just as much soap will be passed in the day, but on microscopic examination it will seem much less because it is scattered and separated by the increased amount of protein matter. Microscopic examination of a stool for soaps without considering the formula is just as misleading as trying to estimate the red count in a fresh blood smear by comparison with the white cells without first having made a white count.

When milk is ingested by the infant, small, soft curds form very quickly, composed mostly of fat. These vary in size from extremely small particles to pea or even olive sized masses, and are always seen when a baby vomits milk. Ordinarily, these masses of fat pass through the pylorus and are broken down into fatty acids and soaps, forming the typical soap stool. If there is any sort of indigestion present, mucus is secreted in excess, mixing with the stool. This mixture of mucus with the stool produces all varieties of abnormal forms. If the mucus is well mixed with the rest of the stool, the granular soap stool results. If a great deal of mucus is present in the intestine it surrounds the masses of fat curds as they enter from the pylorus, interfering with their proper digestion and absorption.

The granular soap stool differs from the normal soap stool in that the surface is granular when spread out with the stick. The granules are small masses of soaps surrounded by mucus. They may be very minute or as large as pinheads. The larger granules are macroscopic, but nevertheless are small fat curds surrounded by mucus. If a small bit of granular stool is placed between two slides and spread out to transparency, it will be noticed that clear mucous spaces surround small, opaque areas. On the addition of acetic acid and heating, it will be noticed that the globules of fatty acids appear in groups marking the location of the original small curd or granule.

The curdy stool is easily recognized by the larger soft white masses. There is always a large amount of mucus in these stools, the mucus surrounding the curds —in fact, it is probably because of the presence of the mucus that the curds exist—the curds being masses of ordinary soaps separated from each other by mucus which had been secreted in great abundance because of some sort of indigestion—not always fat indigestion, by any means. When a bit of curdy stool is placed between two slides, a large proportion is found to be clear mucus. Breast milk stools are usually of this variety, curdy with mucus. The mucus is probably secreted in large amount because of the irritation caused by the abundant fatty acids. Mistakes are often made in the interpretation of loose, curdy stools. Because they are full of fat curds it is supposed that there must be a fat indigestion. The curds are the result of some indigestion or irritation rather than the cause.

Neutral fat is rarely present in stools, and when found is a grave symptom indicating a serious condition of fat intolerance. In most instances when it is found, it is proved later to be not from the milk but from castor oil, olive oil, or some ointment used on the baby. Fatty acids are not uncommonly found. Breast milk stools contain them frequently and are not considered pathologic. When found in cow's milk stools, it signifies impaired fat absorption. Stools containing free fatty acid globules almost always contain also many fat curds and a great deal of mucus. In considering fatty acids it must be remembered that formic, acetic, butyric, lactic, succinic acid, etc., are fatty acids or derivatives of them, as well as stearic and oleic and palmitic acid. Formic acid, acetic acid, etc., are lower in the series, more irritating to the mucous membrane, and soluble in the watery content of the stool, not appearing on microscopic examination. Stearic, oleic and palmitic acids are very complex and high in the series, are insoluble in water, presenting themselves as oily, colorless globules, and are easily distinguishable as red or orange globules when stained with sudan III. In examining a stool for fatty acids, we look only for globules. Finding none, we presume that that particular phase of fat indigestion is not present. But the stool may be very acid from the presence of fatty acids lower in the series that do not form globules but are in solution, and clinically it makes little difference whether the higher or lower fatty acids are present.

CARBOHYDRATE STOOLS

Starches are readily stained with dilute tincture of iodin or Lugol's solution. The particles of undigested starch stain blue or black. Stools containing much fermented starch are loose, acid, light brown, and excoriating, and contain much mucus. In fact, these stools are often mistaken for mucus. This type of stool is most likely to be found in babies having indigestion from certain of the starchy proprietary foods. Small brownish specks are often found in normal stools, representing the indigestible cellulose envelops of cereal foods.

Indigestion of sugar presents no typical stool. Stools resulting from sugar fermentation are frequent, very acid and excoriating, and often watery. The solid parts are usually full of small air bubbles formed by the chemical decomposition. These may be demonstrated by pressing out some of the stool between a slide and cover glass and examining with the low power. The stools are usually green because of the action of the acids on the bile pigments. Stools from sucrose or lactose fermentation are green, while those from maltose-dextrin preparations are brown. Mead's dextrimaltose does not color the stools as dark brown as most of the other maltose-dextrin preparations.

BLOOD IN STOOLS

Blood swallowed or blood from a gastric or intestinal lesion renders the stool dark purplish, almost black. In extreme constipation, the scybala may excoriate the rectum and anus, producing mucus and blood which adheres to the outside of the stool.

Polyps and fissures in the rectum and anus also occasionally account for streaks of blood in the stool. Intussusception produces blood and mucus without fecal matter. Blood from the rectum occurs fairly often in hemorrhagic disease of the new-born.

Blood may be found in the stools also in infectious diarrhea. The blood comes from small ulcerations in the walls of the colon, and appears as small specks or streaks, or larger blotches of bright red blood. It is always accompanied by mucus, which is produced in the same location as the blood.

COLOR

Breast milk stools are yellow to orange. Very young babies have the faculty of passing orange colored stools even when fed cow's milk. After the third month the stools become grayish even if the formula remains unchanged. Very rarely does a baby older than 5 months pass orange colored stools when on artificial feeding.

Light Colored Stools.—Stools containing no bile or colorless forms of bile are very light, almost white. Many forms of soap stools are very light. Unchanged bismuth renders the stool a very pale color. The crystals of bismuth can be made out on microscopic examination.

Dark Colored Stools.—Meconium is very dark brown or green, almost black. Starvation stools are similar. Blood from high up in the gastro-intestinal tract gives the stool a very dark purplish color, sometimes actually black. Medication containing iron will render the stool a greenish black. Changed bismuth makes the stool a dark slate blue, almost a gray black. Charcoal medication and argyrol in the nose or throat will make the stool black.

Green Stools.—Green stools are held in great horror by the laity. The number of stools, however, their consistency, and the presence of mucus and blood are of much more importance than the green color. Most soap stools turn green on the outside when allowed to stand for a few hours. This is due to the oxidation of the bile salts from bilirubin to biliverdin, and becomes more marked when the stool is wet with urine. High protein stools are usually olive green, but are not abnormal on that account.

Pink Stools.—Urates from the urine often color the napkin pink, somewhat resembling blood. Certain oxidation products of bile from the stools will sometimes produce a pink color on the napkin just around the stool. This may also resemble blood.

Brown Stools.—Stools are brown from maltose-dextrin preparations. The greater the proportion of maltose, the deeper the brown. Starch in the diet will render the stool brown. Meat, meat juices, broths and vegetables will do the same thing. Fat-free milk sometimes gives a brown shade to the stool.

ODOR

The odor of stools is so variable that it cannot be depended on as a help in the examination. Breast milk stools usually smell sour. High protein stools usually smell foul or cheesy. Mucus gives a musty odor. Butyric, lactic and acetic acid, and so on, have their own peculiar odors. The urine often smells worse than the stool after both have stood a day in the napkin.

BACTERIA

Bacteria play an important part in the digestive processes and in certain diseased conditions of the digestive tract. Their presence must be considered as part of the physiology of digestion. We know almost nothing about their action in health, and, except in one or two instances, very little about their action in disease.

Consideration of such bodies as membrane, pus, undigested food particles, worms and foreign bodies has been purposely omitted as beyond the scope of this paper.

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PROLONGED ANURIA

REPORT OF A CASE *

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Prevost and Dumas,[1] in 1823, while working with nephrectomized dogs, were the first to point out an increase of urea in the blood. Babington,[2] working with Bright [3] in 1836, showed that this retention of nitrogenous bodies is closely related to kidney defects and to the production of uremia. While anuria or an absolute retention produces an excess of the nitrogenous bodies in the blood, it gives a very different clinical picture from that of convulsions due to uremia described by Bright. In contrast to the convulsive patient with uremia, the patient with anuria is generally quite comfortable; his intellect is clear, convulsive symptoms are rare, edema is slight or absent, and gastro-intestinal symptoms are mild. Ascoli [4] termed the anorexia, the progressive asthenia and the terminal stupor seen in these patients urinary poisoning, and distinguished it from uremia. The condition is due to a rather sudden complete retention of all substances normally excreted by the kidney, in contrast to the more selective gradual retention in most cases of uremia. No matter what the cause, mercuric chlorid poisoning, removal of all kidney tissue, or complete ureteral obstruction, the symptoms are the same. Hewlett,[5] in an endeavor to determine the part played by urea in the production of asthenic symptoms, took large amounts of urea by mouth, and when the urea in the blood reached 160 mg. for each 100 c.c. asthenic symptoms set in.

FUNCTIONAL FINDINGS

Patients with anuria often show a surprisingly high urea content in the blood. Myers and Fine [6] report a case of anuria following mercuric chlorid poisoning with 368 mg. of blood urea and 33.3 mg. of creatinin for each 100 c.c. After decapsulation of the kidneys, the creatinin dropped from 33.3 mg. to 14.8 mg. Uremic symptoms did not appear until shortly before death.

High blood urea concentration is a reliable sign of defective kidney elimination. Fourteen of eighteen patients with high blood urea observed by Folin and Denis [7] died in the hospital or shortly afterward. Normally creatinin, which should average from 1 mg. to 3 mg. for each 100 c.c. of blood, is readily eliminated by the kidney; a retention in most cases means a serious kidney defect. In a series of patients studied by Chace and Myers,[8] all who had creatinin above 5 mg. died soon afterward.

Only a small amount of functioning kidney tissue is necessary to life, as is shown by patients with polycystic kidneys who live quite comfortably even though their kidneys are almost completely destroyed. Mosenthal and Lewis [9] cite a case of polycystic kidneys in which the blood urea was 118 mg. with only a perceptible trace of phenolsulphonephthalein in two hours. Fifteen months later the blood urea and phenolsulphonephthalein were unchanged and the patient was working every day.

Much experimental work has been done to show the return of kidney function after the removal of the obstruction to the urinary stream. Keith and Pulford [10] were able to demonstrate that kidneys excreted urea and phenolsulphonephthalein normally after a ureteral obstruction of seven days' duration was removed. Johnson [11] proved that kidneys obstructed for more than fourteen days do not return to normal. Rautenberg [12] found that a kidney did not function after three weeks of complete ureteral obstruction. He holds that there may be temporary recovery, but eventually the renal tubules atrophy. Bainbridge [13] has shown that the secreting power of a kidney steadily diminishes after ureteral obstruction, but that it is not completely lost after two months.

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* From the Mayo Clinic.

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CLINICAL COURSE

Diarrhea, a common symptom in uremia, is not an accompaniment of anuria. Vomiting is rare and patients do not perspire, as was noted by both Egers [14] and Schwengers [15] in patients with anuria; this is unfortunate, as it excludes one of the most important channels of elimination. Cases of anuria of long standing are not unusual. Frank [16] reports a case of anuria following nephrectomy for tuberculosis in which the patient passed only a few ounces of urine in twenty-six days. In this case the cessation of the urinary output affected the respiration, which dropped to twelve a minute, and later to eight and six. Russel [17] reports cases of twenty and thirty days' standing in which the patients recovered, and others of twenty-five and twenty-two days in which the patients died.

PATHOLOGY

Legueu [18] says with reference to absolute retention, "Anuria does not occur except in patients who live with one kidney only." In the majority of cases there is either a congenital absence of one kidney, or one kidney is destroyed or functionally useless. In an analysis of thirty cases which were proved at necropsy, Legueu found that one kidney was absent in three, destroyed by stones in twenty, and the ureter obliterated in six. Morris,[19] in a similar analysis of twenty-eight cases, found that one kidney was absent in six, atrophied in eight, destroyed by stones in eleven and by hydatid cyst in one, and enlarged in two cases.

In the thirty cases reviewed by Legueu in which operation was performed, the functioning kidney was obstructed by calculi in the pelvis in seven, and the ureter was obliterated in twenty-three. In fifty-six cases in which operation was not performed there were sixteen recoveries (28.5 per cent.). In one the secretion recommenced on the third day after onset, in ten between the fifth and tenth, in three between the tenth and fifteenth, and in two after a still longer period. Twenty-three of the forty deaths occurred between the fifth and fifteenth days, one on the fourth day, and the others after the sixteenth day.

Morris reviewed forty-eight cases of anuria in which operation was not performed and forty-nine cases in which operation was performed; thirty-eight (79.1 per cent.) of the forty-eight patients died, and twenty-five (51 per cent.) of the forty-nine recovered. The operation consisted in removing the obstruction to the urinary stream, in most cases ureterolithotomy or pelviolithotomy. Frank,[20] after having decapsulated a kidney without benefit, experimented with animals and found that decapsulation of the obstructed kidney is absolutely useless. Morris holds that when the working kidney is hydronephrotic, the patient with obstructive anuria has a much better chance than otherwise. He says, "The presence of a hydronephrotic tumor indicates the continuation of urinary secretion, imperfect certainly, but still sufficient to prolong life and therefore it forms an important element in the prognosis." Roberts [21] cites a case of obstructive anuria of ten days' duration with an increasing tumor in the left iliac fossa; recovery took place following a spasm of kidney colic simultaneous with the disappearance of the tumor. Russel reports a case of anuria lasting twenty days which terminated by the discharge of 10 liters of urine in twenty-four hours. A year later the patient died, and at necropsy a double hydronephrosis with calculi in the pelvis of both kidneys was found.

Most investigators report a primary hydronephrosis following complete ureteral obstruction. Barney [22] found this in thirty-two of thirty-three dogs with uni-

BLOOD AND URINE

	Twenty-Four Hour								Each 100 C.c. of Blood								
Date, 1920	Fluid Intake, C.c.	Urine, C.c.	Specific Gravity	Reaction	Albumin	Sugar	Erythrocytes	Pus	Carbon Dioxid per Cent. by Volume	Uric Acid, Mg.	Creatinin, Mg.	Urea, Mg.	Two Hour Phenolsulphonephthalein	Systolic Blood Pressure	Diastolic Blood Pressure	Hemoglobin, per Cent.	Erythrocytes, Millions	Leukocysts, Thousands
10/ 1	.....	.....	.....	.....	...	...	...	...	....	....	3.3	130						
10/ 4	.....	.....	1.004	Acid	2	0	1	3	....	....	3.3	126	0	178	106	62	3.8	9.0
10/ 6	.....	550	1.002	Acid	1	0	1	3										
10/ 9	.....	1,200	1.002	Acid	2	0	1	3										
10/13	.....	1,100	.....	.....	...	...	...	...	....	....	5.0	304	5					
10/15	1,320	600	1.006	Acid	2	0	2	1										
10/16	1,680	1,100																
10/17	1,250	500																
10/18	1,110	60	.....	.....	...	...	...	...	....	....	....	....	....	184	90	54	2.02	4.4
10/19	1,770	150	.....	.....	...	...	...	...	40									
10/20	4,660	0																
10/21	2,300	0																
10/22	780	0																
10/23	1,250	0																
10/24	990	25	.....	.....	...	...	...	...	.....	7.7	18.8	244	.....	.....	.....	30		
10/25	250	0	.....	.....	...	...	...	...	....	....	....	....	....	190	100			
10/26	1,705	0																
10/27	620	0	.....	.....	...	...	...	...	....	....	....	....	....	200	100			
10/28	1,680	0																
10/29	1,660	0	.....	.....	...	...	...	...	....	....	26.6	521						
10/30	870	0																
10/31	980	0																
11/ 1	490	0	.....	.....	...	...	...	...	22	11.2	26.4	527						
11/ 2	1,680	7 hr. 540	.....	.....	...	...	...	...	....	....	....	....	....	172	98			
11/ 3	3,360	3,300	1.010	Acid	2	0	...	...	....	....	20.3	379	Faint trace	154	90	36	2.62	10.2
11/ 4	2,800	*																
11/ 5	.....	*	.....	.....	...	...	...	...	....	....	....	....	....	108	58			
11/ 6	.....	*																
11/ 7	.....	*	.....	.....	...	...	...	...	....	....	....	....	....	84	58			

* Urine drained into dressings.

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lateral ligation of the ureters. In fifteen instances collected by him of ligation of the ureters during the course of operation, hydronephrosis developed in twelve. Caulk [23] found no instances of primary atrophy in twenty-five experimental ligations in dogs. Beer [24] showed that atrophy and shrinkage of the hydronephrotic sac set in after three weeks.

A case of pure urinary poisoning observed in the Mayo Clinic resulted from a long standing, complete obstruction of a single functioning kidney. The case is of interest, not only because of the exceptionally large amount of nitrogenous waste products found in the blood, but also on account of the rapid onset of elimination after a long standing complete urinary retention had been relieved.

REPORT OF CASE

Mrs. S. H. D. (Case A 335972), aged 60, entered the Mayo Clinic, Sept. 30, 1920, complaining of frequency of micturition and dysuria. Her family history was unimportant except that her father had died of diabetes and one brother had died of "kidney trouble." She had had five children and two miscarriages prior to the last pregnancy. She passed the menopause at her forty-eighth year. Three months before examination she had begun to have dull, intermittent pain in the left side of the abdomen. Moderate anorexia and slight dyspnea on exertion commenced at this time. A hematuria lasting two days occurred one month before and recurred after one week. The second attack lasted seven days. The patient was passing small amounts of urine every half hour when she arrived at the clinic, and had lost 20 pounds in weight during the previous four months.

The routine physical examination was negative except for slight thickening of the radial and brachial arteries. The systolic blood pressure was 176 mm. and the diastolic 106 mm. The eye grounds were negative. The tonsils were small and showed no evidence of infection. The teeth had been removed several years before. Roentgenograms of the urinary tract and the Wassermann test were negative. A single specimen of urine had a specific gravity of 1.002, with an acid reaction, a small amount of albumin, a few red blood cells, and many pus cells. There was no return of phenolsulphonephthalein in two hours after its intravenous injection. The blood urea was 130 mg. and the creatinin was 3.3 mg. for each 100 c.c. of blood.

The cystoscopic examination was made, October 2. The bladder was not irritable and had a capacity of 150 c.c. Neither meatus was seen. In the region of the left meatus was a small pocket, on the border of which was a sessile growth having an inflammatory appearance, 1 by 3 cm., and surrounded by a stellate area of scar tissue. A mild reaction followed the cystoscopic examination. The patient was encouraged to take as much fluid by mouth as possible. Physiologic sodium chlorid solution and 5 per cent. glucose were given subcutaneously, intravenously and by rectum. Hot packs were used, but perspiration could not be induced and the packs were discontinued on the fourth day. The daily excretion of urine varied between 400 and 1,200 c.c., until October 18, when only 60 c.c. were excreted. A slightly tender mass in the region of the left kidney was felt at this time. Between October 19 and November 2 the only urine excreted was 25 c.c., October 25. Edema of the eyelids appeared, October 22, and gradually increased during the next week. The patient remained clear mentally. Her appetite was poor and she vomited moderately, especially during the early part of her stay in the hospital. October 25, it was noted that the mass in her left side was distinctly larger. A generalized toxic dermatitis appeared, October 30, and subsided the following day. The blood urea gradually rose until November 1, when it was 527 mg. for each 100 c.c. of blood. The creatinin increased from 3.3 mg., October 1, to 18.8 mg., October 23, and October 28 it reached 26.6 mg. for each 100 c.c. The carbon dioxid content of the plasma, which was 40 per cent. by volume, October 19, dropped to 32 per cent. by volume, November 1. Methylene blue was given by mouth, October 31, and November 1 a second cystoscopic examination was made, in an unsuccessful attempt to locate the cause of the obstruction. The ureteral orifices were not seen. The inflammatory mass in the region of the left ureter had somewhat subsided since the first examination, and appeared as a small area of granulation tissue. Even though the definite cause and the location of the obstruction were unknown, it was thought best to give the patient the benefit of an exploratory operation with drainage of the kidneys if possible.

Operation was performed, November 3, under light ether anesthesia. The left kidney was found to be three times normal in size, definitely congested, and swollen, but hydronephrosis was not found. Decapsulation and pelviotomy were performed. A rubber tube was fastened in the pelvis. Urine was not found. The right kidney was small, contracted and sclerotic, not more than 5 cm. in its greatest diameter, and having the appearance of a functionless kidney. During the first seven hours following operation, 540 c.c. of urine was excreted. This urine had a specific gravity of 1.011. On the following day, November 4, 3,300 c.c. was passed. The urine was distinctly colored by the methylene blue taken four days previously, and had a specific gravity of 1.110. It contained 12.87 gm. of urea, 0.714 gm. of uric acid, and 2.3 gm. of creatinin.

For the first two days after the operation the patient was brighter, her appetite improved, and the edema disappeared. By November 3 the blood urea had fallen to 379 mg. and the creatinin to 20.3 mg. for each 100 c.c. This improvement was of short duration; the patient became drowsy on the third day. On the fourth day breathing became irregular and labored and the drowsiness increased, although when the patient was aroused she was clear mentally and well oriented. Death ensued on the fifth day. Necropsy was not obtained.

COMMENT

The most striking feature of this case is the remarkably clear intellect of the patient throughout the course of the disease. She was calm, mentally alert, and at most times quite comfortable. During the first few days of retention she was nauseated and vomited and, as in other such cases, it was impossible to induce perspiration. She had very little appetite; she was fairly active during the first part of her stay in the hospital, but became weak later and remained in bed most of the time. She became stuporous only a few hours before her death. The blood urea at one time of 528 mg. for each 100 c.c. shows that it is possible to have an extremely high concentration without the production of uremic symptoms. The blood urea and creatinin determinations twenty-four hours after drainage of the pelvis of the kidney, and the amount of fluid excreted in the first twenty-four hours, show a rapid restoration of function which is unusual, considering the long period of inactivity. Following shorter periods of obstruction, complete function may be readily resumed.

The lack of evidence pointing to the cause or location of the occlusion, and the low kidney function prior to the retention in combination with the extremely high blood nitrogen findings, make an operation in the present case a source of last resort. An early operation is undoubtedly the desirable course in this type of case, if the obstruction is located or the nature of the process is known.

23. Caulk, J. R., and Fisher, R. F.: Experimental Study of the Effect of Ureteral Ligation with Particular Reference to Its Occlusion During Pelvic Operation; Preliminary Report, Tr. Am. Assn. Gen.-Urin. Surg. **10**: 72-81, 1915.

24. Beer, E.: Experimental Study of the Effects of Ureteral Obstruction on Kidney Function and Structure, Am. J. Urol. **8**: 171-176, 1912.

Antivivisection Means Hatred of Knowledge.—The roots of the antivivisection propaganda spring from a hatred of new knowledge, of the restless inquisitiveness which compels experimental inquiry into the mechanics of the animal body.—*Lancet*, Dec. 11, 1920.

GASTRIC ANALYSIS

I. FUNDAMENTAL PRINCIPLES*

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So much has been written on gastric analysis, and we have been so constantly engaged on this subject, that until some conclusions were permissible, we did not allow ourselves to deduce conclusions on evidence that appeared incomplete. There are, however, so many misconceptions regarding gastric analysis and the points that are to be noted in interpretation, that we propose, in a short series of articles, to cover the essential points in this study.

In the first place, we have heard an amount of criticism regarding the value of gastric analysis which is out of all proportion to the knowledge that many of these critics can possibly possess. The same critics mercilessly condemned the fallacies of the roentgen ray. One of us can well recall, a number of years ago, the statement of Béclère, professor of roentgenology at the University of Paris, who, inveighing against the critics of this then comparatively new method of internal diagnosis, said: "The x-ray never lies; it simply penetrates bodies in inverse proportion to their atomic weight—it is not the x-ray which is at fault, it is our interpretation which is at fault." This is, after all, a human failing and not altogether misunderstood by any practitioner of medicine. Only a year later, Haudek, in 1913, was so bold as to make the assertion, in the presence of one of us, that all the fundamental principles regarding the roentgen-ray study of the alimentary tract were already laid down, and he looked for only comparative details in the future. With the exception of air and gas injection in the abdomen, this prediction has been curiously correct.

It is precisely the same thing regarding gastric analysis—the more we study this subject, the more we are convinced of one definite point, and that is that properly performed gastric analysis always represents clearly gastric work or the sum total of gastric work; and when mistakes are made, it is due to an inability on our part to interpret that response. Today, we are clearly in a position to say:

1. The roentgen ray can clearly delineate the form, position, contour and mobility, as well as the motor activity of the stomach. It then follows that any disease which alters the form, position, contour, mobility or motor activity of the stomach can be detected with the roentgen ray. On the other hand, as is the case in so many instances of purely functional disturbances, in the whole group of acute and chronic inflammations, as well as in those organic diseases which have not produced sufficient alteration to be recognizable with the roentgen ray, such as early mucous ulcer and beginning neoplasm, this method has no value. This in our experience is the main fault with the literature, namely, the inability to discriminate between the limitations of the roentgen-ray examination and that of gastric analysis. The foregoing statement, in our opinion, is a perfectly fair one and recognizes the inestimable value of the roentgen-ray examination when properly performed.

2. On the other hand, gastric analysis is simply a measure of gastric work. It is simply the sum total of secretory and motor work of the stomach on the particular substance that has been introduced as a test. And it simply reveals the sum total of secretory and motor work plus any exudate or transudate which might be contributed by any existing pathologic lesion. As we see gastric analysis, it is simply a measure of three important points: (*a*) gastric motor function as shown by the duration of digestion manifested after the administration of a certain test meal: (*b*) secretory function which is the sum total of all the factors, extragastric and intragastric, making up the secretory curve, and finally (*c*) the determination of evidence of pathologic condition of the stomach, such as mucus, pus, blood, bacteria, organic acids or protein, which in themselves are either contributed by the lesion, or are occasioned by it. It follows, therefore, that any disease which alters gastric motor function or gastric secretory function, or which contributes some peculiar pathologic product to the gastric secretion, should be recognizable by means of gastric analysis. And if a condition occurs which does none of these things, we cannot expect it to be discernible by means of gastric analysis. We do not expect to delineate changes in form, mobility or contour, even the evidence of changes in peristaltic function, unless those changes induce disturbances along one of the three lines mentioned.

FUNCTIONS OF STOMACH

Before we consider the details of gastric analysis, we must have clearly outlined the functions of the stomach. These might be thus enumerated:

Clearly, the most important function is that of food preparation rather than food digestion. Functionally and anatomically divided into two parts, the fundus and antrum, we might call the fundus the secretory chamber and the antrum the great motor mechanism of the stomach. The acid secretion is formed in the fundus—the antrum is clearly the mechanical comminuter of food—so that all three varieties of foodstuffs: carbohydrates, fats and proteins, are mechanically subdivided. Chemical digestion, however, is initiated to only a limited extent—pronounced with proteins, almost negligible with fats and carbohydrates. It is true that the connective tissue binding fat cells and muscle fibers is swollen and dissolved, while protein digestion is carried through the first stages of protein hydrolysis, but the fundamental fact remains that the small bowel is the great digesting organ and the stomach the great safeguard as well as the organ preparing the food for digestion. In our studies on normal digestion with every variety of foodstuff, the extraordinary factor of safety shown by the normal stomach, as well as its ability to prepare the most diverse substances, is a factor worthy of mention. This property is clearly lost in disease, as we shall discuss later. Its function being, therefore, food preparation, the measure of food preparation is a measure of gastric function, and we have no truer evidence of so-called functional analysis than we have in gastric analysis. In fact, gastric analysis is a measure of simply two fundamental points: one, gastric function—secretory and motor—and the other pathologic, through alterations in function and through the addition of products that do not belong to normal function.

* From the Department of Physiological Chemistry, Jefferson Medical College.
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NORMAL STANDARDS

Another factor that has served to complicate gastric analysis hopelessly is the question of a normal mean or standard for comparison. There is no communication to our knowledge which clearly points out the limits of normal and pathologic gastric function, and the determination of the healthy mean and its variations is one of the necessary corner stones for a rational system of gastric analysis. We have been told that such and such acid grades are normal and certain grades abnormal; that such and such evacuation figures are normal, others abnormal; and it was precisely because of this uncertainty as to normal values that we devoted the last six years to studying normal digestion, in order to arrive at some basis for the measure of normal function.

Let us for a moment consider how broad are the variations in health. For instance, in the digestion of pork and pork products [1] in healthy men in thirty-one different tests on ten different subjects, individuals with a rapid emptying type of stomach showed an average evacuation time for pork products of two and three-fourths hours, while those with slow stomachs revealed an evacuation time of three hours and forty minutes on the average. This included roast pork, sausage, ham (boiled, fried, minced and baked), bacon, scrapple and pork chops, with the most rapid evacuation in two hours with roast pork and minced ham, respectively, and the slowest evacuation in five and one-half hours with 250 gm. of roast pork. With beef products [2] in more than seventy complete experiments on twenty-five different subjects, the administration of 100 gm. of beef products gave, on the average, in fast stomachs two hours and thirty-five minutes, and in slow stomachs three hours and twenty-five minutes. These tests included roast beef, beef steak, hamburger steak, stewed beef, corned beef, dried beef, liver, frankfurters, sweetbreads and tripe, with the most rapid evacuation time two hours with well done roast beef and well done hamburger steak, and the slowest evacuation four and one-half hours with beef tongue, but actually from five and one-half to six hours with 250 gm. of stewed beef and well done roast beef. Fourteen tests were performed on lamb,[3] with the fast stomachs showing two and one-half hours as an average, and the slow stomachs three hours and twenty minutes. These included roast and stewed lamb, lamb chops, sheep brains, with the most rapid evacuation one and three-fourths hours with roast lamb in one instance, and the slowest evacuation four hours with stewed lamb.

Again, the digestion of egg [4] in every form was tested: raw; soft boiled; hard boiled; scrambled; fried; omelet; deviled and pickled eggs; soft cooked and hen's eggs; duck eggs; turkey eggs; frozen hen's eggs, cold storage eggs and combinations of milk and eggs; bacon and eggs; French toast; Chinese pidan eggs, and orange albumin. In ninety-two complete experiments, the fast stomach (forty-four) showed an average of two hours and fifteen minutes; and forty-eight of the subjects, representing slow stomachs, revealed an average of three hours and five minutes. The fastest evacuation recorded was the raw white, in one hour. The slowest was soft boiled; cold storage; scrambled; scrambled with excess of fat; hard boiled, and even soft boiled, all of which in certain individuals recorded an evacuation time of three and one-half hours. In one case, a Chinese pidan egg required four and three-fourths hours. Plain hot tea or coffee did not delay evacuation, whereas cocoa markedly delayed the emptying of the stomach. Candies [5] depress the acidity and may delay evacuation.

Two things are apparent from these studies which emphasize the necessity of revising our ideas of gastric analysis, namely, that there is unquestionably no fixed mean; but just as there are J stomachs and steer horn stomachs and every variation of these two extremes normally on the roentgen-ray screen, so there are normally fast and slow stomachs. These remarks simply serve to emphasize the marked normal variations in evacuation time, without which knowledge it is impossible to deduce any pathologic data. It is obviously absurd to draw conclusions regarding gastric evacuation time when our information is incomplete regarding the normal variations that may occur; and yet we have seen in many contributions hard and fast rules regarding this very subject. In a future contribution on the first important essential in gastric analysis, the determination of the evacuation time, this point will be thoroughly discussed.

The same thing is true of gastric acidity. Some time ago, we pointed out the marked normal variations in acidity, and in this series of observations, extending over a period of six years, we have noted the most diverse acidities. Only one conclusion is permissible at this point, namely, that the conception of high acid values must be entirely changed if we are to compare pathologic variations with the normal variations in health. This subject is too lengthy to discuss at this time. On the other hand, our studies have emphasized the great value of subacidities from a pathologic point of view.

TEST MEAL

One of the greatest drawbacks in gastric analysis is the lack of standardization. Every variety of test meal has been proposed, from the simplest which we proposed, namely, water, which has been used by Austin as a test meal, to the most complex meals destined to throw light on gastric function. Nothing in our opinion could produce a more perplexing result than a multiplicity of test meals. If the purpose of a test meal is to show gastric evacuation secretory work and the presence of pathologic products, certainly the latter point is defeated by the complex meals suggested by continental writers, in which all evidence of food retention, evidence of previous meals, and the presence of pathologic products is hopelessly lost in the meat fats and carbohydrates composing these meals. If the purpose of a meal is simply to impose a given load on the stomach, the simpler that load is the more readily shall we be able to deduce pathologic findings. With a water meal, for instance, the withdrawal of anything but water and gastric secretion is pathologic, and with the administration of an Ewald meal, the withdrawal of anything but bread and secretion is pathologic. So, again, a fundamental principle must be a test load of sufficient simplicity to produce gastric work and at the same time reveal its variations. It must be accessible, of an average short evacuation time, and must not interfere with the detection of pathologic products. We see no reason, owing to the simplicity, accessibility, stimulating power and particularly our knowledge of its value—

1. Smith, C. A.; Fishback, H. R.; Bergeim, Olaf; Rehfuss, M. E., and Hawk, P. B.: Am. J. Physiol. 49: 204 (July) 1919.
2. Fishback, H. R.; Smith, C. A.; Bergeim, Olaf; Lichtenthaeler, R. A.; Rehfuss, M. E., and Hawk, P. B.: Am. J. Physiol. 49: 174 (July) 1919.
3. Fishback, H. R.; Smith, C. A.; Bergeim, Olaf; Rehfuss, M. E., and Hawk, P. B.: Am. J. Physiol. 49: 222 (July) 1919.
4. Miller, R. J.; Fowler, H. L.; Bergeim, Olaf; Rehfuss, M. E., and Hawk, P. B.: Am. J. Physiol. 49: 254 (July) 1919.
5. Miller, R. J.; Bergeim, Olaf; Rehfuss, M. E., and Hawk, P. B.: Am. J. Physiol. 52: 65 (Aug.) 1920.

both normal and pathologic—for setting aside the classical Ewald meal. A fixed test load, simple and accessible, readily withdrawn and capable of showing both secretory and motor variations as well as pathologic products, is a sine qua non as the basis for intelligent analysis of the stomach.

GASTRIC CYCLES

We must realize that gastric digestion is a constantly changing series of cycles, and that in the normal individual these cycles succeed one another, the digestive cycles, in response to the ingestion of food, being succeeded by interdigestive or rest cycles. The chemistry of these two cycles, the digestive and the interdigestive, is totally different. Therefore, it is essential that we form definite conclusions regarding the evolution and composition of these cycles. The fasting stomach shows phenomena totally different from the digesting stomach as to the type and quantity of secretion, the total and free acid figures, the amount of regurgitation, etc., all of which will be separately discussed in a succeeding article. One thing is clear: The stomach is never at rest, and there is always to be found in that organ an active secretion in health. Furthermore, the sequence of the digestive and interdigestive phases is profoundly altered in disease, factors which we shall have occasion to discuss later.

GASTRIC MECHANISM

Gastric analysis clearly demonstrates the action of certain mechanisms. 1. By a certain form of test meal it is possible to demonstrate clinically the importance of the psychic secretion. This has already been pointed out in a previous communication.[6] 2. There is clearly a chemical curve which can be demonstrated in a different way but which emphasizes the great importance of the chemical secretion in all gastric responses. Furthermore, we have been able to demonstrate the importance of the duodenal regurgitant mechanism, not only in controlling gastric acidity during the digestive phase, but also in contributing to the altered secretion found in the resting stomach. These factors will be discussed in detail; but one thing is clear—we have only begun to realize the possibilities of gastric analysis.

SUMMARY AND CONCLUSIONS

1. Gastric analysis has for its specific object the determination of gastric function and the detection of alterations in that function as well as pathologic products that might be added to it.

2. The specimen removed represents the sum total of all the factors, secretory, motor and pathologic, each one of which is capable of analysis.

3. Disease alters gastric function, either secretory or motor or both, and may reveal itself by the addition of its own specific products (pus, blood, mucus, etc.).

4. Gastric analysis does not reveal changes in form, position, contour or mobility of the stomach. The determination of such factors belongs to the province of the roentgen ray. It does reveal conditions which alter gastric work, that is to say, its motor or secretory function. It is precisely on this principle that the value of gastric analysis rests.

5. Gastric analysis, therefore, has three important functions: (*a*) the determination of evacuation time or motor activity; (*b*) the determination of secretory activity and work, and (*c*) the presence of pathologic products which offer a clue to the type of disease present.

6. It is essential that we begin with an absolute conception of normal gastric work or the response of the normal stomach to digestion before we begin to formulate principles regarding the interpretation of disease variations.

7. Evidence has been offered to show the marked variations of evacuation in health, and the same thing is true of the secretory variations. Our studies have emphasized the minor importance of high acidities and the increased importance of low acidities in disease.

8. Standardization of test meals is absolutely essential to a satisfactory understanding and interpretation of variation in health and disease. There is absolutely no value in complexity of test meals, which only introduces confusion to a subject already sufficiently complex.

9. It is essential that we realize the normal sequence of the digestive and interdigestive or rest phases, in order that we may detect the variations which occur in disease.

6. Miller, R. J.; Bergeim, Olaf; Rehfuss, M. E., and Hawk, P. B.: Am. J. Physiol. 52: 1 (May) 1920.

MENTAL DISORDERS IN CHILDREN FOLLOWING EPIDEMIC ENCEPHALITIS *

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Epidemic encephalitis (encephalitis lethargica) was at first regarded as an acute infectious disease, involving chiefly the central nervous system, running a more or less classical course and terminating either in death or in complete recovery. Once the acute period of the disease was over, the patient was expected to enter on an uneventful convalescence, and make a complete recovery.

As time went on and these cases were followed up, it was evident that the early optimism regarding a complete recovery from this disease was hardly justifiable. Instead of a thorough restitution to normal, it was found that many of the patients had been left with one or more neurologic complications, resembling virtually every conceivable neurologic disorder.[1]

Furthermore, it was found that those patients who had made an apparently complete somatic recovery not infrequently showed some striking forms of abnormal behavior.[2] When one considers the profound structural alterations found in the necropsy material, the marked ectodermic degeneration and the intense mesodermic inflammation, one wonders that there ever should have been any optimism in regard to a complete and thorough recovery. Any brain that had been the seat of such pathologic lesion as was found in those cases coming to necropsy could not be expected to function as well after as before it was diseased. Many nerve cells were lost to the economy of the individual, and in

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1. Abrahamson, Isador: The Chronicity in Lethargic Encephalitis, Arch. Neurol. & Psychiat. 4: 428 (Oct.) 1920.

2. Happ, W. M. and Blackfan, K. D.: Insomnia Following Acute Epidemic (Lethargic) Encephalitis in Children, J. A. M. A. 75: 1337 (Nov. 13) 1920.

their stead there came ectodermic scar tissue and possibly mesodermic tissue, if the original inflammatory reaction was sufficiently intense.

For the last six months we have had occasion to study a group of children who had had epidemic encephalitis and who had subsequently shown sufficient mental disorder to warrant their family physicians sending them for observation to the psychopathic wards of Bellevue Hospital. These patients have all had definite attacks of the disease, and they all showed a more or less uniform mental disorder after their apparent recovery from the acute phase of their illness.

Their ages varied from 5 to 14½ years, and there were four boys and two girls. Their physical condition was such as to lead one to believe that there was no further action of the infectious agent, and that the disease process had come to a standstill. Their temperature, pulse, respiration, blood pictures and urine examinations were all within the limits of what might be considered as normal. The Wassermann reaction in each case was negative.

Their mental status was characterized by purposeless, impulsive motor acts, marked irritability, definite attention disorders, distractibility and changing variable mood, inadequate and inconsistent emotional reactions, marked insomnia and, in two cases, precocious sexual feelings and intense eroticisms.

REPORT OF CASES

CASE 1.—*History.*—R. M., schoolboy, aged 8 years, of American parentage, admitted, Oct. 16, 1920, discharged, Nov. 23, whose family history was negative, had been a normal, full term baby, well developed. He was very bright at school and was fully one year ahead in his school grade. He was sent to Bellevue Hospital with a note from his attending physician which stated that the patient was suffering from "a defect condition following encephalitis lethargica." From the rather meager facts obtained from the parents, the patient was suddenly taken ill about twelve weeks before admission and had an attack of fever, lethargy and eye palsies, which had lasted for about two weeks. The patient was apparently making a fairly satisfactory recovery when, two weeks before admission, he became quite impulsive, restless, could not sleep at night, shouted at the top of his voice, wet and soiled himself, and would strike any one trying to take care of him.

Examination.—On admission, he was very restless, noisy, shouted most of the time, could not stand still, pulled at the chairs, kicked any one trying to approach him, expectorated on every one, and wet and soiled himself. It was impossible to make a thorough mental examination, because of his wild restlessness and lack of cooperation. At night he shouted at the top of his voice, but it was difficult to grasp his words, as his speech was definitely unintelligible and there was definite dysarthria.

Physically, he presented a well developed and fairly well preserved condition; his pupils reacted well, although they were widely dilated; at times there seemed to be weakness of his right external rectus muscle; there was increased tonicity of the muscles on the right side of the body, and there was an accentuation of all deep reflexes, most marked on the right side. There was a doubtful right Babinski reflex. The heart and lungs were negative; pulse, 88; respirations, 24; temperature, 100. The urine showed a trace of albumin. The blood Wassermann test was negative.

Treatment and Course.—For the first week the patient was very restless, could not sleep, shouted most of the time, ate little, and expectorated on every one trying to care for him. His speech was incoherent and disconnected, and was very indistinct. He would throw his arms in all sorts of gestures, and he seemed to be in a state of psychomotor tension. He had to be placed in a dry pack.

At the end of a week he began to show definite improvement. He became more accessible and amenable to care and attention. He slept a few hours during the night and began to walk. He was transferred to the convalescent ward and there he immediately applied himself to occupational therapy. His speech gradually cleared. At the end of a month it was possible to make a Binet test on him, and he rated 8 years with an intelligence quotient of 100 per cent.

His convalescence continued uneventfully until his discharge, when he showed a normal physical condition and an improved mental state. He still was somewhat irritable, rather impulsive, and tired very rapidly. He was transferred to a convalescent home.

CASE 2.—*History.*—A. G., a schoolboy, aged 8½ years, white, New York, was brought to the hospital by his mother, June 11, 1920, because he was irritable, impulsive, destructive and unmanageable at home. The parents, Lithuanians, were in good health, as were two brothers and one sister. The history was negative for two generations. The patient was a full term baby, and labor was of normal duration and delivery was spontaneous. He had measles at 1 year of age, and whooping cough at 2 years. He began to walk and to talk at the proper age. He was bright at school, and reached Grade 2 B at 8½ years of age. He was described by the mother as being an average child, in his physical as well as his mental condition. The present illness dated back to the latter part of December, 1919, when he was sent home from school because of high fever. He vomited the same evening and complained of intense frontal headache. On the following day he became delirious, his eyes became crossed, and he complained of diplopia. His neck became stiff and he became paralyzed in both lower extremities. A physician diagnosed the case as "sleeping sickness" (epidemic encephalitis). He was in bed for three months. His spastic paralysis began to improve at the end of a month, so that in March, 1920, he began to walk. His diplopia also began to improve at the end of a month, but his eyes continued to remain crossed and he still had diplopia.

His mental condition was different since his illness. He became quite overactive, quarrelsome, picked at his teeth and lips continually, and would lead his mother a wild goose chase. He could not be kept at school because of his restlessness, impulsive acts and his tendency to ape the other pupils. He talked incessantly but incoherently, fabricated freely, and could not be trusted with anything. He could not sleep and would frequently jump out of bed. He complained of headache and of pain in the back of the neck.

Examination.—He was examined at the Vanderbilt Clinic, May 7, 1920. There he showed a constant restlessness; he could not stand still, picked at his teeth, nose and legs, blew his nose incessantly, talked continuously and in an incoherent, rambling manner, imitated the other patients, and stood and walked with his head bent forward, resembling a paralysis agitans case. All equilibratory tests were normal. Skilled acts were performed normally. He showed abnormal involuntary movements in head, shoulders and arms. All reflexes were active and of normal type. The muscle status was normal. No abnormal associated movements were seen. General sensibility was intact throughout. The pupils were equal and reacted well both to light and to accommodation; there was diplopia and weakness of the right eye. There was a left facial weakness; otherwise the cranial nerves were intact. The cardiovalvular and respiratory tracts were normal. The blood Wassermann test was negative. The case was there diagnosed as epidemic encephalitis (meningo-encephalitis). During the last two months the mother had noticed that the patient was showing sexual precocity. He tried to have intercourse with his sister, and would often ask his mother to have intercourse with him. He frequently would have erections.

At Bellevue Hospital he showed a well developed, well nourished condition. The pupils were equal, regular, and reacted very promptly both to light and to accommodation. There was moderate right internal strabismus. The eye grounds showed moderate congestion of the veins, but the arteries were normal and the outlines of the disk were clear and the nerve heads appeared pink. All reflexes were of the normal type. The heart and lungs were negative. Sensations were intact. There were no cerebellar lesion signs. The speech was slurring and at times somewhat explosive. The

teeth were in good condition. The tonsils were small and ragged; the nose showed deviation of the septum to the right and a mucoid discharge in the right naris. The right ear was normal, and the left ear drum was slightly retracted. Roentgenographic examination of the skull revealed a marked development of the postauricular portion of the skull, with a very narrow base; the sella turcica was normal in size, shape and outline; there was no retardation of the bony development, and no evidence of increased intracranial pressure. The blood Wassermann test was negative. The urine showed no albumin and no casts.

On the Stanford scale he reached the mental age of 6 years, 4 months, with an intelligence quotient of 79 per cent.

Treatment and Course.—During his entire residence, the patient was careless about his personal appearance; he would often run about the ward in a nude state. He would pick at his nose, lips and teeth until they bled, and his face was full of abrasions. He aped all the other patients and would not infrequently strike them. To the examiners he was impudent and very voluble; he would carry tales to the physicians, etc. He ate very well. His sleep was frequently disturbed by nightmares. He would often jump out of bed and run in terror to the nurses. He at first slept very little at night, but when he was kept from sleeping during the day, he slept fairly well at night. It was frequently necessary to give him wet packs and baths, or to place him in restraining sheets; sedatives were administered very rarely.

His stream of mental activity was of an incoherent, rather rambling nature, never showing any true flight of ideas. He spoke in a lisping, indistinct, slurring, loud and rapid manner. His attention was fleeting. He showed marked physical overactivity and restlessness, would run about the ward, jumping from chairs to table and to the floor, annoying patients and irritating those about him. His general mood was variable and unstable.

There were periods, lasting from six to twenty-four hours, when he would appear quite depressed, timid and retiring. But, as a whole, he was elated, defiant and expansive. His emotional reactions were brisk; he often became excited. His sexual feeling was quite apparent. There were frequent erections and he would always follow the women nurses and female visitors. His emotional tone was generally raised, and mood appearance was that of great tension. At times it seemed as if there were hallucinatory reactions present, and yet, throughout the entire period of observation, it was impossible to establish real hallucinations or delusions.

He was correctly oriented in all fields. His memory for recent events was good, and for remote events was also good. His retention was somewhat impaired, but that was due essentially to his lack of concentration and attention. His attention was distractible and scattered, and he undoubtedly seemed to have thinking difficulty.

The treatment consisted in moderate occupational activity, keeping the patient awake in the daytime and occasionally placing him in a pack or restraining sheet.

He was discharged, Sept. 5, 1920, to the custody of his mother. September 15, he was returned to the hospital. The mother stated that he was destructive, unmanageable, would keep the other children from sleep, and could not be controlled at home. Since his return, he presented the same physical signs noted on his first admission, while mentally he was noisy; he fought with the other children, shouted and screamed at the top of his voice, annoyed the aged and helpless patients, expectorated at nurses, used most abusive and profane languge, fabricated freely, and seemed to be laboring under constant psychomotor tension. He was committed, September 24, to the Manhattan State Hospital on Ward's Island.

CASE 3.—*History.*—M. B., a boy, aged 10 years white, of Jewish parentage, admitted, Sept. 17, 1920, whose parents and two sisters were living and in good health, and in whose family there was no history of nervous or mental disease, had been a full term baby and labor had been normal. His infancy and childhood were that of the average person. He began to walk at 1 year and to talk at 10 months. He was very bright at school, reaching the 6 B grade at 10 years of age. He had measles at 4 years, and influenza in 1918. In April, 1920, he suddenly became drowsy, would not talk, and had some fever. A physician diagnosed his illness as "sleeping sickness" (epidemic encephalitis). The physician who was in attendance had had an unusually large number of cases of this disease and he described the sickness as having run a characteristic subfebrile course, with apathy and drowsiness but without any paralysis, and lasting for two weeks. Following his apparent recovery, the patient became rather restless; he could not remain in one place for any length of time. He became rather filthy in his habits; he expectorated on the floor and on the walls. He was easily frightened. His sleep was disturbed; he could not sleep for longer than two or three hours. He would jump from bed and run in terror to his parents. He then began to show marked eroticism; he would have frequent erections, would hang on his mother, and was very attentive to his sisters. He was referred to the hospital by his physician.

Examination.—At Bellevue Hospital, he presented a well developed, well nourished physical condition. The heart and lungs were negative. All the cranial nerves were intact. The pupils were widely dilated, and reacted well. All reflexes were preserved and were of the normal type. Sensations were intact. There was no evidence of any paralysis. Speech was somewhat slurring and explosive. The blood Wassermann test was negative. Mentally, he presented a condition of silly, psychomotor unrest, impulsive acts, and marked eroticism. He was uncleanly in his personal appearance. He would interfere with the other patients, playing pranks on them. Toward the examiners, he was rather agreeable, voluable and accessible. He ate sufficiently. Occasionally it was necessary to give him a pack. He spoke spontaneously, but the content was not confined to any trend. He was rambling and discursive, speaking in a loud, rapid tone. His physical activity was very brisk and impulsive, jumping about the place, running from one room to another. He never expressed any delusions or hallucinations. He was correctly oriented in all fields; memory and retention tests were good. His general mood was variable and changing. While the greater part of the time he was cheerful and elated, there were times when he appeared rather depressed. He always greeted his relatives and visitors in a pleasant, mild manner, and seemed to benefit from their visits. He showed a strong sexual feeling; there were frequent erections, and he displayed greatd affection toward the female nurses. His mood appearance was that of tension. His attention was scattered and distracted; he often expressed feelings of insufficiency. His school knowledge was good.

His sleep was frequently disturbed, and he would often run from bed in a state of excitement. On the whole, however, he slept fairly well at night when he was prevented from sleeping in the day time.

He left the hospital, Oct. 2, 1920, considerably improved.

CASE 4.—*History.*—A. N., a girl, aged 5 years, brought to the Mental Hygiene Clinic of Bellevue Hospital, July 30, 1920, for examination, was said by the mother to be the youngest of seven children, the first two of whom had been stillborn; otherwise the family history was negative. The patient was a full term child, delivery was normal, and she had been breast fed for fifteen months. She walked at 13 months and talked at 15 months. She had had whooping cough, chickenpox and diphtheria without residuals of any kind as far as could be ascertained. She had never attended school. Her disposition prior to the present illness was described as being that of a quiet, well-behaved child. In September, 1919, she was treated at Bellevue Hospital for prolapse of the rectum. No abnormalities of conduct were observed at that time. In the latter part of January, 1920, the patient slept continuously for fifty-nine hours and then became delirious, reacting to both visual and auditory hallucinations. She was very much confused. The delirium lasted for two weeks, during which time she was treated at home. Following this, after a short period of insomnia, drowsiness developed and she was admitted to the children's medical ward of Bellevue Hospital, March 2, 1920.

Examination.—On admission she was drowsy and sleepy. Physically, she presented dilatation of the left pupil; both pupils reacted sluggishly to light; there was slight internal strabismus of the left eye. In addition, weakness of the

right face was observed. She also presented an ataxia of both arms, with coarse choreiform tremor. The spinal fluid was clear and contained 25 lymphocytes and a trace of globulin; the Wassermann reaction was negative. The blood Wassermann was also negative. The blood count revealed 3,240,000 red blood corpuscles and 6,200 white blood corpuscles. The hemoglobin was 75 per cent. (Sahli). The differential blood count revealed: polymorphonuclear leukocytes, 48 per cent.; transitionals, 4 per cent.; small lymphocytes, 39 per cent.; large lymphocytes, 8 per cent., and eosinophils, 1 per cent.

A roentgenogram of the head revealed nothing pathologic. The patient continued to sleep, but the neurologic manifestations remained stationary until April 6, when she became much brighter, and the ataxia and choreiform movements were less marked.

Further History.—She was discharged, April 22, 1920, as a case of encephalitis lethargica. She was returned to the hospital, May 19, with a history that since being at home she had shown a complete change of disposition: she was disobedient, restless, sleepless and mischievous.

She was overtalkative and quite irritable, throwing anything within her reach and frequently tearing her own clothes. She slept poorly; her appetite, however, remained fairly good. Later she teased and scratched the other children and was taken to the City Hospital at Blackwell's Island, where she remained five weeks, with very little improvement in her conduct. The mother brought her to the clinic with the complaint that she could no longer care for her at home because of her conduct. On examination she was bright and alert; when questioned, she admitted that what her mother had said was true, but gave no explanation for her conduct.

She was quite clear, and there was no evidence of any psychotic manifestation or intelligence defect. Physically her general condition was good, and she was normally developed for her age. The general physical and neurologic examination was negative.

She reported again one week later, with the history that she had been very restless, striking the other children and sleeping very little at night. She was admitted to the Psychopathic Service of Bellevue Hospital for observation.

During her residence here, she showed a manic-like reaction, in that when awake she was very restless and mischievous, pulling things from tables and often teasing the other patients. When spoken to, she was always friendly and docile, very affectionate, and she liked to be petted. At times she would admit being unruly, and again would deny this. When not allowed her own way, she would bite, scratch, swear and kick at any one within reach. She often tore her clothing in her anger. At night she was especially restless, jumping on top of the beds or crawling beneath them. When held in bed, she would bite and scratch the nurses. After several hours of this restlessness and usually after a pack, she fell asleep and slept through the night.

Her conduct and sleep gradually improved at night, under the influence of warm packs, but there was very little change in her conduct during the day. She was discharged to the care of her mother, Sept. 15, 1920, and has since been placed in a convalescent home for children.

Case 5.—*History.*—W. R., a boy, aged 14½ years, white, of American parentage, examined at the mental hygiene clinic, Nov. 24, 1920, whose family history was negative for two generations, had been a full term child with normal delivery. He walked and talked at the usual age. He had measles at 4 years. He had been very bright in school, and at present was in his second year in high school. He had always been of a quiet and obedient disposition. During the first and second weeks of January, 1920, he was treated for "walking typhoid," and was very restless; his temperature ranged between 101 and 104 during this time, and continued at 100 for about three months. For about a month he was drowsy and slept a great deal. When aroused, he was dull and answered questions sluggishly. Since this time he had been sleepless at night; during the day he was mischievous, talkative, elated, singing and whistling, drowsy and sleepy.

For the last two months he had fatigued easily, especially in walking, and his left lower extremity gave way under him. At the same time a coarse tremor involving the left hand developed and had been present ever since. He was treated for chorea until recently, but the tremor had persisted. He was brought to the clinic for treatment of the tremor and general weakness and sleeplessness.

Examination.—Physically, he was well nourished and well developed. His heart and lungs were negative. The cranial nerves were all intact, except that there was some weakness of the left side of the face. The pupils were moderately dilated, and reacted well. The eye grounds were normal. All deep reflexes were active, except that those on the left side were less so than those on the right, and there was a noticeable weakness in the left upper and lower extremities as compared with the right. The superficial reflexes were active and normal in character. Sensation was intact. There was present a coarse, rhythmical tremor, involving the left hand but chiefly the thumb and forefinger. The speech showed no defect. The blood Wassermann test was negative.

Mentally, he was alert, bright and somewhat elated, but not noticeably overactive. He was able to tell of his illness and to describe his symptoms. He said that instead of feeling sleepy at night, he was wide awake and felt like joking and singing, while during the day he was sluggish and drowsy and often slept. His orientation and memory were intact. No trends were elicited. He had good insight into his condition, coooperated well and was anxious to be relieved.

Treatment.—He was given a simple tonic, and advised to sleep only at night on a sleeping porch and take moderate exercise during the day.

Case 6.—*History.*—H. V., a girl, aged 7 years, was brought to the mental hygiene clinic of Bellevue Hospital, July 8, 1920, for examination. The parents stated that the patient was the second child in a family of three. The other children were said to be healthy and apparently normal mentally. A maternal aunt was said to have had chorea; otherwise the family history was negative. The patient was a full term child; instrumental delivery was required, but there were no birth injuries, and the baby appeared to be normal. She was breast fed for nine months. She talked at 18 months and walked at 2 years. She had mumps at the age of 5 and whooping cough at 6 years. She began school at the age of 5½, and was in Grade 2 A when she left in January, 1920, because of the present illness. In the early part of January, 1920, it was noticed that the child was restless and talkative during the day and that she was sleepless and talkative at night. A few days later she became acutely ill and was in bed for ten days. During this time she slept the first five or six nights and was much less talkative and restless during the day. Following this she again became talkative and restless, and slept only every other night. Whe she talked she muttered a good deal, so that it was difficult to understand what she said. She became irritable and had crying spells at times. She seemed unable to concentrate on any one thing, and it took her a long time to accomplish a task which she formerly did readily. Her disposition was entirely different from what it was previously in that formerly she was quiet and obedient, but now was flippant and disobedient. She complained constantly of being tired, and was unable to fall asleep until morning. Her condition gradually became worse; she talked constantly, was very irritable, and paid absolutely no attention to either commands or requests from her parents.

Examination.—The patient said that she felt well. She could give no explanation for her talkativeness, but knew that she talked too much; she felt cranky at times, but did not know why. She said that she liked to wash things, and one day she washed out her sister's blankets (she had formerly been afraid to play with water). She said she was on the go all the time, but didn't know why. During the examination she talked indistinctly, in an undertone, so that it was often difficult to understand what she said. She was quite self-possessed and inclined to be flippant at times. She showed some tendency toward restlessness, walking about the room, taking articles from the desk, etc. Her nutrition was below par, but she was of normal development for her age. General physical and neurologic examination was negative. A roentgenogram of the head and a blood Wassermann test were negative.

Treatment and Course.—A week later the child was brought to the clinic with the report that there was no change in her conduct, and she was admitted to the psychopathic ward of Bellevue Hospital for observation. During her residence, she was restless at first during the day and was irritable. She showed a disposition to sit by herself, playing with her doll, and did not care to play with the other children in the ward. Later she was restless and mischievous. During the night she was very restless and overactive; with her body bent in a jackknife fashion and using her head and feet as pivots, she would move all over her bed for hours at a time, accompanied by a muttering under her breath and occasionally using a profane word. She slept only two or three hours when first admitted, and did not seem drowsy during the daytime. Later she was drowsy during the morning, and when aroused was quite irritable and often swore at the nurses.

Later she became much happier and contented during the day, but her sleeplessness remained at night. Under the influence of warm packs she slept well at night, averaging from six to eight hours. She improved mentally, in that she no longer muttered to herself and was much less restless, irritable and mischievous. She expressed herself when spoken to as liking the hospital, but said that she had to do things which she did not like to do. She said she had never sworn at home and could not tell why she did it here. Her memory and orientation were quite clear. She ate well after the first few days, and on her discharge, September 1, appeared to be much improved, both mentally and physically.

She was returned to the hospital, September 9, by her mother who reported that on return home, the patient was very irritable, slapped her sisters, and called her mother abusive names. She did not sleep at night. On admission she showed an irritable attitude, muttered to herself and was very restless, wandering about the ward and collecting papers, etc. She did this for a few days, and then became more contented and busied herself with her doll and playthings. Her sleep was irregular, some night being natural, but on other nights having to be induced by warm packs. She was discharged, September 20, much improved mentally and physically, but still having some difficulty in sleeping, and inclined to be restless and irritable at times.

A report from the social service department states that the patient still has difficulty in sleeping, and is still restless and mischievous during her waking periods.

COMMENT

We believe that the mental disorder in the cases reported can be best explained on a purely physical basis. While we have no pathologic material to substantiate our opinion, since none of these patients died and since none as yet established the exact period of time that is required for the inflammation in these brains to resolve, reasoning by analogy from cases which showed similar pathologic conditions, such as are seen in general paralysis, in true African sleeping sickness and in subacute infections of the brain tissue, we believe that these symptoms are the result of purely physical processes.

The replacement of the destroyed nerve tissue by neuroglia scar tissue acts as a stimulating and undoubtedly as an irritating agent to the rest of the nerve tissue.

Furthermore, we believe that the resolution of the mesodermic inflammatory reaction takes place over a relatively prolonged period and causes considerable irritation to the remaining relatively normal nerve cells. The irritation to the cell bodies results in the function of these cells with the production of the usual effects of the function of such cells. We therefore have various forms of both motor and sensory disturbances, and marked conduct disorder. Of course, we admit the possibility of these patients being really in a chronic period of the disease, but we do not think that this is the case, since these patients physically showed, as a rule, no evidence of any disease process, and all somatic manifestations of disease processes were absent.

TREATMENT

We found that these patients, just as other patients in whom the brain was the seat of a profound pathologic process, reacted badly to drugs, and especially to such drugs as had accumulative tendencies. We therefore virtually limited our treatment to such physical agents as would give the patient rest, and minimize irritating stimuli to reach the diseased brain.

We found that a warm pack in the milder cases and a wet pack in the more disturbed cases was conducive to sleep and allayed some of the irritability. Furthermore, keeping these patients awake during the day was not a small factor in making them sleep at night. Hydrotherapy and massage were also utilized freely.

Occupational therapy for about an hour and a half in the morning and a similar period in the afternoon was found to be the best method of keeping the patients quiet during the day, and an important agent in hastening their convalescence.

PRURITUS OF ANAPHYLACTIC ORIGIN

REPORT OF TWO CASES

MILTON B. COHEN, M.D.
HALBUR, IOWA

One of the most troublesome conditions of the skin that the physician has to treat is pruritus. The large number of remedial measures suggested for the relief of this symptom, which is usually associated with some chronic metabolic disturbance, demonstrates the frequent inadequacy of any, or all, of them.

Many investigators, among them, Schloss,[1] Strickler [2] and Walker,[3] have studied the relationship of protein sensitization to skin diseases, such as urticaria, angioneurotic edema and eczema, following the suggestion of Fordyce,[4] who in 1911 called attention to the possibility of an anaphylactic origin for eczema. Recently, Fox [5] has reviewed the literature on this subject and has reported the results of protein sensitization tests on sixty patients with eczema. His results and those quoted in the literature seem to indicate that these tests "will ultimately prove to be of therapeutic assistance in a small proportion of cases of eczema of adults."

The two cases reported herewith are of interest because of the lack of demonstrable cause except the food anaphylaxis, the inefficiency of local and general treatment and the complete cure following the elimination of the offending foods from the diet. Walker's method was followed in making the skin tests, using commercial proteins.

REPORT OF CASES

CASE 1.—*History.*—C. E., farmer, white, aged 41, married, whose family and personal histories were of no importance, and who had never had asthma, nor was there any history of asthma in the family, on July 4, 1920, consulted me because of intense itching about the genitals and in the anal region,

1. Schloss, O. M.: Allergy to Common Foods; a Preliminary Report, Tr. Am. Pediat. Soc. **27**: 62, 1915.
2. Strickler, A.: Anaphylactic Food Reactions in Skin Diseases, with Specific References to Eczema, New York M. J. **104**: 198 (July 29) 1916.
3. Walker, I. C.: Causation of Eczema, Urticaria and Angioneurotic Edema by Proteins Other Than Those Derived from Food, J. A. M. A. **70**: 877 (March 30) 1918.
4. Fordyce, J. A.: Infectious Eczematoid Dermatitis, J. Cutan. Dis. **29**: 129, 1911.
5. Fox, Howard, and Fisher, J. E.: Protein Sensitization in Eczema of Adults, J. A. M. A. **75**: 907 (Oct. 2) 1920.

which had troubled him continuously since the preceding January. The itching was so intense that he found it necessary frequently to stop all work, and to obtain momentary relief by scratching. He had tried various local and internal remedies without relief.

Physical Examination.—The head, thorax and abdomen were negative. The skin about the genital region was reddened, thickened and rough. There were no edema and eruption. The urine was negative for albumin and sugar.

Treatment and Result.—Since the usual methods of treatment gave only momentary relief, it was decided to discover and remove the etiologic factor if possible.

Skin tests were made with the proteins of all the foods eaten during a period of one month. There was a + + reaction to pork, with doubtful reactions to potato and milk.

Pork was eliminated from the diet. In seven days, the pruritus disappeared and has not returned during the last six months.

Case 2.—*History.*—H. B., farmer, white, aged 25, consulted me, Oct. 5, 1920, complaining of intense itching over the entire body, of five weeks' duration. He had consulted several physicians who had prescribed the usual local and systemic remedies without result. The family and personal histories were negative for asthma and allied conditions.

Physical Examination.—This was negative except for a slight roughening of the skin and a few excoriations caused by scratching.

Treatment and Results.—Skin tests were made, using the proteins of buckwheat, milk, egg, pork, coffee, corn, tomato and chicken. There was a + + + reaction to potato and a + reaction to buckwheat. The elimination of potato and buckwheat from the diet for nine days gave complete relief for five days, when potatoes were again eaten. The itching recurred in two days. Potato was again eliminated from the diet, with complete relief. There has been no recurrence of symptoms in three months.

Clinical Notes, Suggestions, and New Instruments

A CASE OF BORAX POISONING

Caryl Potter, M.D., St. Joseph, Mo.

On account of the discussion between pure food experts and manufacturing concerns regarding the toxicology of borax, the case herewith reported is important from a pharmacologic and economic standpoint.

REPORT OF CASE

Mr. K., aged 66, a painter, who had formerly been in excellent health, felt slightly constipated and at 8 a. m. took from a marked bottle about an ounce of what he thought was a proprietary saline cathartic. Within fifteen minutes, he was seized with violent epigastric cramps, accompanied by attacks of retching and vomiting, coming on at from five to ten minute intervals. A physician was called, who made a diagnosis of acute indigestion and ordered milk of magnesia. At 10:15 a. m. I was hurriedly called. When I arrived the patient's pulse was weak, the extremities were cold and clammy, there was cold sweat on the forehead and cyanosis. At five minute intervals he would cry out that he was strangling or choking, and he almost strangled when a little whisky was administered. The lips were slightly cyanotic. At intervals of a few minutes he cried out with pain in the epigastrium and then immediately after he would grasp his throat and complain of difficulty in swallowing, of choking and strangling. Notwithstanding active, hypodermic stimulation (1/30 grain of strychnin and 2 c.c. of camphor in oil), he died in one of these paroxysms one hour after my arrival. There was no lead line on the gums or other symptoms present or past to suggest lead colic.

Necropsy was advised and permitted by the family. The bottle, one-half filled with the powder taken by Mr. K., was saved. Necropsy, performed at 4 p. m. by my associate, Dr. L. H. Fuson, revealed nothing abnormal. Chemical analysis of the contents of the stomach demonstrated the presence of 1½ ounces of borax. The bottle contained pure borax.

COMMENT

At the coroner's inquest it was shown that the deceased's mother-in-law, about 80 years of age, had filled the empty saline bottle with borax without informing the family or changing the label, and that it had been placed on the medicine shelf by another member of the family who thought it was a bottle of saline laxative.

The coroner's jury returned a verdict of accidental borax poisoning.

CONCLUSIONS

This was a cleancut case of borax poisoning, conforming in every respect to the clinical picture.

The necropsy findings were otherwise practically negative, for the cause of sudden death and the etiology of the poisoning were demonstrated beyond peradventure.

This case demonstrated that borax is a potent poison when taken in large quantities. It should be labeled poison and should not be used carelessly without a definite understanding that it has fixed toxicologic properties.

120 South Seventh Street.

BRAIN ABSCESS OF OTITIC ORIGIN WITH EPILEPTIFORM ATTACKS

DECOMPRESSION FOLLOWED BY RECOVERY *

Carl Marion Sautter, M.D., New York

W. C., a boy, aged 13, rated as a first year high school student in a private school, became ill during the early part of January, 1920, with paratyphoid. While convalescing he was brought in contact with a case of measles. Shortly after this he also developed measles, and had apparently recovered from this when he complained of a severe pain in the left ear. His physician within a few hours called in consultation an aurist. An acute suppurative otitis media of the left side was diagnosed, and an incision of the drum performed. Irrigation with boric acid solution was made every three hours. On the fourth and fifth days the patient became nervous and restless, and suffered somewhat from insomnia. His temperature range was from 100 to 102.5 F.

February 18, I was asked by Dr. Alexander Schmitt to see the patient. His temperature at this time was 103 F. He was extremely nervous, apprehensive and rather septic in appearance. The right ear was perfectly normal. From the left ear came a profuse yellow discharge of pulsating character. It was difficult to keep the canal wiped. The incision made previously appeared to be extensive, and afforded all the drainage possible. At this time slight tenderness was elicited directly over the mastoid antrum. A smear was taken and later reported as showing a pneumococcus. A specimen of urine was negative for albumin and sugar.

The nurse was instructed to irrigate the ear every hour with boric acid solution, and even at intervals during the night. The patient was seen daily and the canal cleansed. In spite of the utmost care the discharge remained, pulsating and very profuse, although there was no sagging of the drum. The insomnia persisted. On the 21st and the next two days the temperature range was from 100 to 105 F. The tenderness had increased over the mastoid, extending well over the temporal and zygomatic regions, but none over the tip. Any increased tenderness over the meningeal area is significant of operative interference, especially with a ten day history of aural discharge. At this time a simple mastoid operation was advised. The same day a roentgenogram was taken at St. Luke's Hospital. This revealed an increased cloudiness of the left side and a most unusual extensive pneumatic mastoid bone. The cells were extremely high over the zygoma and temporal plate; the tenderness corresponded exactly to the location of these cells.

* Read before the Otological Section of the Academy of Medicine, May 14, 1920.

The patient was removed to the Misericordia Hospital, and a simple mastoid operation was performed. The cells were numerous and extensive, especially in the middle fossa and overlying the temporal bone, where they were more superficial. Free pus was found in these with granulations, but very little in the mastoid tip. The cells were thoroughly curetted to the plate, but neither sinus nor dura was exposed.

Next day the temperature receded to normal and remained normal, and the patient was apparently making an uneventful recovery. The mastoid wound was looking fine, with a diminution of discharge and no discharge from the canal. However, March 4, that is, ten days from the date of the operation, I was informed that the patient was having a convulsion. When I arrived at the hospital an hour later, the boy was still in convulsions. He was in a deep coma, with respiration only at great intervals, and then a convulsion, which was more or less generalized. The patient had been in good condition until about an hour previous to the attack, when he tried to ask for the urinal bottle, which he seemed to recognize but could not name. There had not been chills or headache. The respiration and pulse rates were normal. There was some difference of opinion as to whether the convulsions in the beginning were more right sided than left sided. There was no history of any former attacks of epilepsy, and the family history was negative. Oxygen was given while the operating room was being put in readiness. With the history of the word aphasia symptom and the convulsions probably due to a local meningeal edema, I performed a decompression. There were no adhesions of the dura, but a slight discoloration; my light was poor at this time, but the case was urgent. The middle fossa was uncovered and the temporal plate removed, about an inch in diameter, extending directly over the ear. A vertical linear incision was made through the dura about an inch in length. This released what appeared to me as coffee-ground blood, with a small piece of organized clot or slough. A grooved director was passed forward, inward and backward in the brain substance in the various directions in the effort to locate an abscess, but with no success. A cigaret drain was inserted and the wound left open. In the afternoon of the same day the patient had apparently regained his normal self. His reflexes were normal and equal. His conversation was coherent and rational. There was no aphasia or ocular nystagmus. At this time Drs. Dench and Garretson were called in consultation. The fundi were negative. There was no nystagmus. All reflexes were normal. Those of both upper and lower extremities were slightly exaggerated, but normal. Abdominal and cremasteric reflexes were normal and equal. The muscle tonus was normal throughout. Sensation (tactile, pain, temperature and muscle sense) was normal. On examination, the right ear at this time proved to be normal. Urinalysis was negative. Examination of the spinal fluid and blood gave a normal cell count and negative Wassermann reaction. At the end of four days the patient continued normal with no elevation of temperature. The drain was completely removed at this time, having previously been shortened or successive dressings. There was no pus or exudate coming from the wound.

March 10, in the morning, there was a distinct hesitation in the patient's speech, rather stumbling in character, with irrelevent and monotonous phrases. He spoke of seeing his father, who had died shortly after the boy's birth. There was no nystagmus, over pointing or stiffness of the neck. The reflexes were normal. There was no deviation of the tongue or twitching of the mouth. The condition remained about the same during the day except for continued motor aphasia with an inclination to vomit. However, at 6 o'clock the same evening they informed me that he was again having convulsions. I reached his bedside, about forty-five minutes later, when the patient was having convulsions at intervals, but was not in the deep comatose state that he had been in at the previous attack. His contractions were evidently right sided, involving the face and the limbs. He was immediately removed to the operating room, where I extended the removal of the temporal bone on a line with the supra-orbital ridge and about 1 inch in front of the ear. A new vertical linear incision was made, and a grooved director passed forward and downward about an inch toward the frontal convolutions. At the second passing, a teaspoonful of rather blood-stained pus was exacuated. A cigaret drain was placed. The next day the temperature was about 101 to 102. The reflexes were normal and the patient was fully oriented. The second day the temperature was still at 102. In the morning, when the drain was removed, a considerable amount of thick exudate was found behind it. Instead of replacing the cigaret drain, I rolled and inserted a small piece of rubber at the base of the abscess. Following this the rubber drain was removed twice daily and the patient's temperature dropped to about 99. About this time he developed pain in the eye. Dr. Conrad Berens, Jr., reported vision 20/15 and normal fundi. Two days later the patient developed another slight rise in temperature, which was due to the development of an abscess beneath the temporal muscle. This was readily drained, and the tempature dropped to normal and remained so until his complete resolution, April 19. No hernia had developed in this case, and the hearing was 20/20. Up to about a week ago when I last heard from this patient he was in good health and apparently quite normal.

COMMENT

Acute brain abscess cases rarely complicate acute otitis media, and even less so the epileptiform attacks. If an abscess has been located and drainage established and maintained, resolution is the natural course, if located early enough. Of course, there is always the possibility of the abscess rupturing, inundating the ventricles or the subarachnoid space, and causing a suppurative meningitis. At the first decompression the symptoms pointed more to an abscess or pressure of the sensory speech center of the left temporosphenoidal lobe, while the distinct motor speech symptoms prior to the second attack made it evident that further involvement existed, farther forward in the frontal lobe.

It seemed to me that the simple rolled rubber drain proved most effective in maintaining the drainage. This, of course, was gradually shortened, allowing granulations to fill in from the bottom and to wall off the meninges.

11 East Forty-Eighth Street.

ARTIFICIAL PNEUMOTHORAX IN FRACTURED RIBS

ANGELO L. SORESI, M.D., NEW YORK
Visiting Surgeon, Greenpoint Hospital

This is a preliminary note on the use of artificial pneumothorax in the treatment of fractured ribs, which seems a new and very useful application of artificial pneumothorax. In fractured ribs it is a common practice to strap the patient with adhesive plaster, so that the chest is put at rest and the patient saved from the often excruciating pain caused by the movement of the fractured ribs. However, it is evident that when there is a complete fracture of the rib, not only is such strapping ineffectual, but also it may be dangerous and later cause deformation of the chest.

If there is no injury of the lungs or of the pleura, the best manner to prevent expansion of the chest would be by resorting to artificial pneumothorax, which obviously puts the affected thorax at complete rest. I have used this means in one case in which the sixth, seventh and eighth ribs were broken, and strapping had not relieved pain. Immediately after the application of the artificial pneumothorax the patient felt absolutely comfortable and remained so. Injections of nitrogen were repeated three times. Artificial pneumothorax can be said to be so safe nowadays in the hands of competent surgeons that there cannot be objection to its use in the treatment of fractured ribs.

220 West Fifty-Ninth Street.

Hospital Ventilation.—There is really no question as to the value of good ventilation in the hospital. This is one of the places where such ventilation is absolutely necessary, and in remodeling or rebuilding the thought should be kept in mind of just how to go about it to secure the right kind of ventilation every hour of the day and night.—C. A. Eddy: *Hospital Management* 9:44 (Jan.) 1920.

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SATURDAY, FEBRUARY 5, 1921

THE HISTORY OF ANAPHYLAXIS

Students of the history of science are often surprised, in examining the literature of earlier days, to find some germ of a truth that was not fully appreciated until later days, or some unmistakable observation of phenomena that failed to receive appropriate attention in the era in which they were discovered. Unexploited discoveries are always likely to be forgotten or overlooked. Presently the finding is made anew and endowed with all the interest and enthusiasm that attaches to novelties—until perchance the historian acquaints us with a chapter of the past which robs them of their newness. Hence one often hears the expression, "There is nothing new under the sun."

An illustration of such an experience is afforded in the case of anaphylaxis. Most physicians have become familiar with its manifestation in connection with the so-called "protein sensitization" of the body. Anaphylactic phenomena are being discussed with enthusiasm in these days in connection with serum disease—the peculiar manifestation that occasionally is observed after the use of therapeutic immune serums. Hay-fever has been included in the clinic of human anaphylaxis. Asthmatic seizures have been related to protein hypersensitiveness. A variety of reactions induced by bacterial proteins are also usually included in the same general category. To most students of the varied aspects of anaphylaxis, its history dates back to the observations of Richet, the French physiologist who coined the word that has now found such widespread application. Richet and Hericourt [1] observed in 1898 that dogs treated with eel serum could be killed by a second injection of an amount too small to injure normal untreated animals. Subsequently, Richet and Portier [2] discovered that from sea anemones a substance could be prepared which causes intense vascular congestion in the viscera of dogs. They also found that if a dose insufficient to cause death is given, so that the animal recovers, a second extremely small dose may provoke violent symptoms. This effect is obtained only if a number of days have elapsed between the first and second injections. In other words, under certain definite conditions, poisonous proteins may produce a condition of hypersensibility rather than immunity to subsequent doses. The supersensitive state, in contrast to prophylaxis, was designated as anaphylaxis. Later, observations by Theobald Smith, communicated by him to Ehrlich in 1904, and known as the "phenomenon of Theobald Smith," the well-known studies of von Pirquet and Schick,[3] and notably those of Rosenau and Anderson [4] of the United States Public Health Service, marked the beginning of almost countless researches into the anaphylactic aspects of immunity.

In his illuminating presidential address on the progress of bacteriology in recent times, delivered before the American Association for the Advancement of Science at Chicago a few days ago, Simon Flexner [5] furnished a reminder that the phenomena of anaphylaxis had been known and recorded long before the work of Richet. The earliest observation appears to to have been recorded by the French physiologist Magendie. In lectures published in 1839, he noted that an animal that had borne without apparent effect one injection of a harmless protein, such as egg white, reacted severely to a second injection of the same kind of material given after an interval of days. No further contemporary attention seems to have been given to this isolated incident. A clear statement was also given by Flexner [6] himself in 1894. He tells us that he was engaged on a study of the pathologic action of the toxalbumins, and his attention was attracted by recent experiments on the similar globulicidal (or red blood corpuscle destructive) action of certain alien blood serums, such, for example, as the serum of the dog for the red globules of the rabbit. Since animals could be rendered immune to the toxalbumins, the attempt was made to make rabbits immune to dog's serum, but without success. On the contrary, it was found that animals that had withstood one dose of dog's serum succumbed to a second dose given after the lapse of some days or weeks, even when this dose was sublethal for a control animal.

The experiments that Flexner conducted afforded a perfect illustration of what is now known as active sensitization. This distinguished pathologist has himself drawn a lesson from the failure of the earlier workers to recognize the great significance of what they so clearly observed. Their experiences came at a period when knowledge of and interest in the general subject of immunity had not progressed far enough to make the observations duly appreciated. To quote a favorite expression of Pasteur, the "prepared mind" was still lacking. Most things under the sun may not be new; but whether new or old, a scientific observation must fall on fertile soil if it is to develop and bear fruit.

1. Richet and Hericourt: Compt. rend. Soc. de biol., 1898.
2. Portier and Richet: De l'action anaphylactique de certains venins, Comp. rend. Soc. de biol. **54**: 170, 1902.
3. Von Pirquet and Schick: Die Serumkrankheit, Vienna, 1906.
4. Rosenau, M. J., and Anderson, J. F.: Bull. Hyg. Lab., U. S. P. H. S. **29**, 1906; **30**, 1906; **36**, 1907.
5. Flexner, Simon: Twenty-Five Years of Bacteriology: A Fragment of Medical Research, Science **52**: 615 (Dec. 31) 1920.
6. Flexner, Simon: Medical News **65**: 116, 1894.

TELEGONY—THE PRENATAL INFLUENCE OF A PREVIOUS PROGENITOR

About 1530, Jacques de Fouilloux, a famous French dog fancier, wrote in his treatise on hunting, "After a bitch has been for the first time lined there will always be found, among her subsequent litters by other dogs, certain puppies which will have the characteristics of the first male." Others have since recorded the same observation, so far as the life of certain of the lower animals is concerned. Lord Morton commented on it in 1821 in the *Philosophical Transactions;* Darwin and Claude Bernard also spoke of it from the standpoint of physiology. Among the most prominent modern authors to consider it were Zola, who used it in his novels "Madeleine Ferat" and "Fécondité," and Wallace Irwin, who based on it a short story of recent vintage. While the existence of the phenomenon has been denied, particularly by Nathusius and Sattegast in Germany, it is generally admitted that there is a probability of the existence of this strange prenatal influence, at least in some of the mammals. Marked instances of it are on record as regards the dog.[1] Miles, in his book on stock breeding, and also Kiener in the *Journal of Agriculture* in 1890, cite rather conclusive instances. The phenomenon occurs in horses, particularly when a mare has been first covered by a jack,[2] and instances are cited among cattle, sheep and pigs. Boissard, in an interesting report read at the St. Louis Hospital, Paris, in 1910, reports a series of experiments with mice, both white and gray, which are in support of the hypothesis.

Various theories have been advanced to account for this phenomenon. Some authors have held that the sensations of the first coitus were particularly vivid in the female, and in those succeeding, this sensation and the image of the first male were so closely associated as to bring about the condition referred to as telegony. This view merits little consideration, since, if it were logical, we should find the condition more markedly existent in the human species, with its highly developed mental processes. Cornevin and Bouchard were responsible for the theory of the exchange of some nutritive substance between male and female. The former thought that this might be accomplished through the agency of the fetus in utero, assuming that there was in it some paternal quality which definitely and permanently affected the mother.

To epitomize what Bouchard says in support of this theory: It may be possible that impregnation concerns not only the spermatozoon in its entirety, but also all the ultimate cells that go to compose it. These, in the development of the fetus, after the impregnation of the ovum, retain the characteristics of the male, and through the uteroplacental circulation all tissues of the mother, including unfertilized ova, are subject to a modifying influence tending to the retention of the characteristics, in whole or in part, of the first male progenitor. Boissard compares this nutritive theory of telegony to the phenomenon of eclamptic intoxication which has been considered as transmitted to the mother from the fetus through the uteroplacental blood exchange. It is this theory that at present receives most serious consideration. Tcherepoff[3] calls attention to the data of the Abderhalden reaction in support of it. Claude Bernard's theory concerned delayed or prolonged vitality of the spermatozoa, and Darwin advanced the supposition that there is a more permanent reaction between the male and female than that comprised in the impregnation of the ovum by the spermatozoon, but neither has seemed to have a sufficiently sound basis for serious consideration. Cousin, on the other hand, asserts that all phenomena of this sort are attributable to spontaneous variation, atavism or superfetation.

In the human race it is impossible to make any such precise deductions as with the lower mammals. In the first place, there is less variation in racial characteristics, and in the second, experimentation is hardly possible. There is often cited the supposed case of the white woman who, first married to a negro, had as issue from a second union with a white man a negro child; but for this case there is no authentication. Moreover, such an occurrence might be explainable as a case of superfetation. Lingard cites the fact that a woman married to a hypospadiac husband had by a subsequent marriage hypospadiac children, and there are also instances of the apparent transference of deaf-mutism and polydactylism; but, all in all, they are not convincing. In "Mathematical Contributions to the Theory of Evolution," Karl Peterson[4] discusses the theories of telegony in the human race, and is inclined to believe that in the triangle involved it is the traits of the dominant ancestor which will prevail. He is guarded in his acceptance of the possibility of telegony, and believes that the question of reversion to former type in the families of the immediate progenitors may explain some of the phenomena attributed to it.

This condition was quite recently the subject of an interesting discussion in the French Academy, where it was taken up as to its possible bearing on the future of the unfortunate women who were violated by the Germans in the invaded parts of France. The general conclusion was that there was little reason to suppose that these women would show any Germanic trace in their future issue attributable to the forced intercourse. Of the discussion, which was protracted and which considered the question in detail, Tcherepoff says: "This discussion is interesting and furthermore very comforting in view of the distressing period through

1. Darwin: The Variations of Animals and Plants.
2. In "The Penycuik Experiments" by Dr. J. C. Ewart of Edinburgh there is related the result obtained by first breeding a mare to a zebra and afterward to a stallion. The results in this series of experiments were not altogether conclusive. This series is reviewed in Nature, July 20, 1899.
3. Tcherepoff, Alexis: De l'imprégnation maternelle ou télégonie, Jouve and Co., 15 rue Racine, Paris, 1916.
4. A review of his work is given in the Proceedings of the Royal Society of London, Nov. 26, 1896.

which we have passed. Perhaps, unfortunately, it is more consolatory than scientifically precise."

If it is true for the human species, as seems highly probable with the animals, that the first male sets an indelible seal on the female with whom he has intercourse, telegony is a further argument for the continence of woman before her marriage; it is, as it were, a biologic plea for chastity. The moral reasons for this are already a part of man's innate belief, and it is ingrained conviction with him that the woman whom he weds is, in every way, solely his. If it is demonstrated that indiscretion on her part prior to her marriage may have a material and visible effect on her descendants, it must necessarily fortify, from a material side, the spiritual teachings of the Mosaic law. It is to be regretted that Tcherepoff does not in his thesis adduce anything more conclusive than what he sets forth—conjecture and the marshaling of the views of others on the subject. The board of the academy which reviewed his paper is elusively vague in affirmation or negation as to the bearing which telegony may have on the human species.

THE OUTLOOK IN THE STUDY OF DIABETES

Exclusion of carbohydrates from the diet no longer stands as the preeminent dietotherapeutic procedure in the management of diabetes. This plan has its limitations. Following the lead of Allen, in particular, students of the subject have acknowledged the possibility of checking the ravages of the disease, before it reaches its severest stages, by fasting and restriction of the total diet. Joslin has emphasized the responsibility of physicians who often find diabetic patients in a state which is endurable but which can be improved. Only too frequently treatment in the past, he writes, has done the patient more harm than good; though the fault lies not in the principles of treatment, but rather in their application. The physician who undertakes to treat the patient with diabetes whose condition is comfortable resembles the surgeon who, operating for an interval appendicitis, assumes a responsibility far greater than when acute symptoms make such an operation imperative.[1]

With a responsibility so forcefully emphasized, it becomes almost a duty to speculate as to the basis on which the most recent of the recommended therapeutic measures rest. What is the rationale of "sparing a weakened pancreatic function" by reducing the food intake? How can the pancreas be either "overtaxed" or "rested"? Are there obvious anatomic as well as functional indications of what the harm of the disease or the benefit of the treatment consists in? Allen has observed that an explanation of the effect of fasting is not found in any gross or microscopic alteration in the pancreas; in particular, he states, there is no evidence of an increase in the islands of Langerhans by fasting. Consequently, the known effects of fasting must be sought elsewhere in the organism.

Fasting or undernourishment inevitably lowers the weight and presumably the metabolism of the body. At first thought it might be supposed that in this way a reduction in the stored food supply of the tissues would occur, thereby in turn increasing their capacity to receive food. In a study made at the Hospital of the Rockefeller Institute for Medical Research, Allen[2] reminds us that in the normal organism, at any rate, utmost glycogen storage does not lower sugar tolerance. He insists that "some state of preparedness of the organism is more determining than the mere fulness or emptiness of the depots." The most probable factor, in the light of the latest evidence, involves the quantitative relations of the hypothetic pancreatic hormone. It may be assumed that the cells require a certain minimum of this substance in order to function so as to prevent the diabetic state. When this minimum is present, Allen[2] argues, the organism retains its power to metabolize almost the whole of any glucose dosage that can be absorbed from the alimentary tract or the subcutaneous tissue, no matter how large or how long continued the dosage may be. When this minimum is reduced by only a trifle, the phenomena of diabetes begin.

In order not to exceed the effectiveness of the supply of pancreatic hormone, then, a small deficit as it occurs in mild diabetes may be guarded against by restriction of carbohydrate. With more severe diabetes, the total diet and the body weight as well must be reduced. With still more severe diabetes, Allen argues further, the supply of hormone is inadequate for even the lowest metabolism, and glycosuria is therefore uncontroilable even by fasting. On the basis of such considerations the obvious conclusion is that the efforts of the future should be directed, perhaps more than they have been in the past, toward enhancing the supply of the essential hormone. The experiments with partially depancreatized dogs—experiments which most nearly approximate the diabetic states observed in man—indicate that a relatively small mass of normal pancreatic tissue can prevent diabetes even if sugar tolerance is somewhat reduced. In the dog the "margin of safety" amounts to at least seven-eighths of the gland, all parts of which seem to have approximately equal potency. Dietary factors are important in reducing the metabolic work to be done; fasting is helpful up to a certain point in diminishing the volume of body cells to be served. But in the outlook for the investigations of the future we must join Allen in the belief that "any positive means of augmenting the endocrine pancreatic function even by a little would give therapeutic results far surpassing those of the negative plan of sparing the function by diet."

1. Joslin, E. P.: The Treatment of Diabetes Mellitus, Philadelphia, Lea & Febiger, 1917, p. 300.

2. Allen, F. M.: Experimental Studies in Diabetes, Series II, The Internal Pancreatic Function in Relation to Body Mass and Metabolism, Am. J. M. Sc. **160**:781 (Dec.) 1920.

FEDERAL CARE OF MATERNITY AND INFANCY: THE SHEPPARD-TOWNER BILL

As announced in a recent issue,[1] the Sheppard-Towner bill, providing for the "public protection of maternity and infancy," passed the Senate, December 16. In the House, it was referred to the Committee on Interstate and Foreign Commerce, which on January 25 reported it out with several amendments. The bill, as it now stands, appropriates $1,480,000 annually for "promoting the care of maternity and infancy in the several states; to provide instruction in the hygiene of maternity and infancy," and for "making such studies, investigations and reports as will further the efficient administration of the act." It authorizes the Children's Bureau to form an advisory committee consisting of the Secretary of Agriculture, the Surgeon-General of the Public Health Service and the Commissioner of Education. The bureau is authorized to expend 5 per cent. of the appropriation for administration purposes, to pay $10,000 annually to each state for administration expenses, and to apportion the remainder to the states in proportion to their population, provided each state appropriates an amount equal to the amount it receives. In any state having a child welfare or child hygiene division in its state health agency, the state health authorities shall administer the act. The state health authorities shall submit to the Children's Bureau a detailed plan for administration and "for instruction in the hygiene of maternity and infancy through public health centers, consultation centers, and other suitable methods."

All will agree that the objects sought, namely, the care of maternity and infancy, and instruction in the hygiene of maternity and infancy, are in the highest degree commendable. There cannot be too much knowledge or too much instruction of the right sort on such vital subjects. There are, however, serious objections to the methods proposed.

The bill provides funds through the apparently popular method of federal state aid, i. e., the appropriation of a large sum of money from the federal treasury to be prorated to the various states, provided the state appropriates an equal amount. Bills are now before Congress providing similar methods for the development of physical training, for improvements in education, for the treatment of venereal diseases and for other projects, all good in themselves, but activities which belong to the state and local authorities. It is not strange that this method has become popular with those who have pet measures to advance. It has the advantage of simplicity. It is only necessary to induce Congress to appropriate a certain sum to be divided among the various states. This prospective grant is then used as an inducement to the states to appropriate equally large sums. The advocates of this plan apparently regard the federal treasury as an inexhaustible reservoir, entirely overlooking the fact that such increasing appropriations will necessitate heavier federal taxes to be matched with heavier state taxes, all of which must be paid eventually by the common citizen. That the so-called federal aid plan is economically unsound has already been pointed out by some of our leading financial authorities.

Another objection is centralized administration. How would the proposed plan work out? Some state, say Minnesota, would receive $10,000 for administration expenses, with its additional pro rata, probably $30,000 in all, provided the legislature appropriated $30,000. This would give the state department of health $60,000 for maternal and child welfare. Splendid! But it could not expend this sum, one half of which is its own money, until its plans had been approved by the Children's Bureau in Washington.

The care of mother and child is a state and local, not a federal function. All will agree that every mother and child should receive proper care. So should every mother and child receive suitable nourishment. But it is not the function of the federal government to provide either food or care. There are certain public health functions which are clearly national in character; others which should be performed by the state, and still others which belong to the local government. As pointed out by Dr. Billings in this issue,[2] the rational method of providing proper care for the individual is through voluntary self-taxation of voters in a political unit to pay for the necessary local facilities for the prevention of disease and the promotion of health. While this may seem slow as compared with the more popular plan of securing an appropriation from Congress, it is the method by which our public health machinery in this country has been developed, and is the method which will yield the most satisfactory results in the long run.

Current Comment

THE CLEVELAND HOSPITAL AND HEALTH SURVEY

Lucky Cleveland! It has had a diagnosis! Consider the city as sick—not bedridden, necessarily—but suffering with the various aches and pains with which, from the health point of view, most cities are afflicted. Here it suffers from bad housing; there its sewage disposal is obstructed; again, its water supply is deficient, or it lacks open air and breathing space; it has perhaps no reserve hospital supply. As with an individual invalid it has had the attention of various specialists from time to time but never a complete and thorough diagnosis revealing all its defects, their mutual relationships and causes. In November, 1919, a survey staff, headed by Drs. Haven Emerson and

1. Senate Passes Sheppard-Towner Bill, General News, J. A. M. A. 76: 321 (Jan. 29) 1921.

2. Billings, Frank: The Future of Private Medical Practice, this issue, p. 349.

Gertrude Sturges, was organized under the auspices of the Cleveland Hospital Council. Specialists were called in to examine into various parts of the patient. The case history and findings published recently consist of eleven sections occupying 1,100 pages,[1] and include: general environment and sanitation; public health services and private health agencies; child health; tuberculosis; venereal disease; mental diseases and mental deficiency; industrial medical service, women and industry, children and industry; education and practice in medicine, dentistry and pharmacy; nursing and hospitals, and dispensaries; and one pamphlet is devoted to the method and bibliography of surveys, which describes how the work was done. The diagnosis shows that Cleveland is ailing in many ways but that there is a remedy for each of its ailments. An analysis of the diagnosis reveals information of value applicable not only to the ailments of Cleveland but also to similar ailments of other large cities. There are many phases of the report of great interest and worthy of extended comment. We wish here only to congratulate the patient on the excellent attention it has received. The whole examination, including the publication of the report, has been a highly economical proceeding. Not only has it been carried out economically; it must result in a great saving of life and in increased health and happiness for the people of the city. Lucky Cleveland!

FUTILITY OF ATTEMPTS TO CONVINCE AN ANTIVIVISECTIONIST

The classical allusion to a maximum disturbance is "a bull in a china shop." However, if we are to believe the report which recently appeared in the Washington, D. C., *Evening Star*, an even greater disturbance may occur when a lover of animals speaks to a meeting of antivivisectionists. Perturbed language marked the meeting of the National Society for Humane Regulation of Vivisection when its members were addressed by Ernest Thompson Seton. Mr. Seton, it is reported, had the audacity to say to these antivivisectionists that the rights of human beings when they clashed with the rights of animals should be paramount. Then he added insult to injury by remarking that he noticed furs being worn by many of those of his audience, and that animals had suffered from two to three days' agonies in traps in all probability to provide these furs. At the conclusion of the address, one of the woman antivivisectionists asked the speaker if he believed that animals should be put through the agonies of so-called scientific vivisection in order to allow experimentation of theories. Mr. Seton replied that if his child was threatened with blindness and could be saved only by the killing of an animal, he was in favor of the vivisection of one animal or 100 animals to make it possible. The woman declared that she would go blind or lame or ill rather than cause 100 animals the agonies or suffering of vivisection. Then Mr. Seton countered with the direct question, "Has the speaker a child?" and the lady admitted that she had not. With the usual cool and calm logic of an antivivisectionist, she remarked that she had a widowed sister who had a child, and that this child, at the age of 5 years, on hearing of vivisection had stated that it was "the devil's own work." Mr. Seton inferred that it was his belief that the words had been put into the child's mouth. It was obviously a precocious little prig. Mr. Seton wasted his time trying to convince an antivivisectionist. It can't be done. Logic has no appeal where unadulterated sentiment predominates.

1. Cleveland Hospital and Health Survey, published by the Cleveland Hospital Council, 308 Anisfield Building, Cleveland.

"RENDER UNTO CAESAR"

The report of the Hospital and Health Survey of Cleveland, Ohio, referred to elsewhere on this page, comes in eleven sections or parts. The eighth of these sections, dealing with "Education and Practice in Medicine, Dentistry and Pharmacy," has one of its four chapters on "Quacks and Patent Medicines." It details the industry of quackery in Cleveland and lays special stress on the tremendous amount of medical swindling done among the foreign-born of Cleveland through the medium of the foreign-language press. The report is an excellent one, even though it deals in generalities and makes no attempt to expose specific frauds. To one statement, however, THE JOURNAL must take exception. In speaking of the various agencies in the United States that are combating quackery and the nostrum evil, this report refers to the activities of the American Medical Association thus:

> "The American Medical Association has prepared and published a series of pamphlets on nostrums and quackery for the use of the public. These have a limited circulation among those who least need their warning."

The facts are that THE JOURNAL, through its Propaganda department, has been the only agent working year in and year out for a period of nearly fifteen years, systematically and persistently exposing fraud in medicine and putting the results of its work in easily available form. Over a million pamphlets and books dealing with this subject have been put into the hands of the public, and the American Medical Association has spent hundreds of thousands of dollars in maintaining the organization necessary to carry out and continue this educational work. In addition, the Propaganda department of THE JOURNAL has answered thousands of letters of inquiry sent in to it by laymen who were seeking information on some specific fraud or frauds. It is common practice for municipal and state boards of health when they receive letters of inquiry from laymen relative to certain "patent medicines" to forward the inquiry to THE JOURNAL with the request that it furnish the information. Advertising men interested in clean and truthful advertising are in daily correspondence with THE JOURNAL seeking data on medical preparations or devices, the advertisements of which have been offered to some of their members. In many of the schools and colleges over the country the pamphlets and books on the nostrum evil and quackery, prepared and issued by the Propaganda department of THE JOURNAL, are in use in classes on home economics and hygiene. The educational posters issued from the same source, as well as the series of lantern slides, which are for rent or sale at a nominal figure to any responsible

person competent to use them, are also available for giving visual education in specific facts regarding medical fraud on the public. And this is not all by any means. It would seem, therefore, that the part played by the American Medical Association in educating the public on the nostrum evil and quackery might properly have been acknowleged in the Cleveland report if only as a matter of record and to give a correct perspective of the problem.

TAKING CHIROPRACTIC SERIOUSLY

An Idaho physician sends to THE JOURNAL an advertisement of some local "chiropractors" appearing in the Idaho Falls *Times-Register*. The announcement is headed in black-faced type: "Why His Wife Left Him." It details the case of one, Jack, who "never had a smile for his wife" and "was grouchy with the baby." Mrs. Jack "thought he had ceased to love her because he desired to sleep alone." As a matter of fact, Jack did love her "but, due to nerve pressure in the spinal column, he was not normal sexually." The wife did not know this, of course, and in time left him. Whereas:

"A happy home could have been made if he had gone to the Busby Chiropractic specialists and had those vertebræ adjusted to normal."

This advertisement, which appeared on the "Society and Personal" page, is a choice selection for home reading. It is even less defensible than the chiropractic testimonial which, according to the Chicago *Tribune*, appeared in the Michigan *State Journal:*

"*Dear Doctor.*—Before taking your Chiropractic and Electric treatments, I was so nervous that NOBODY could sleep with me. After taking six treatments ANYBODY can sleep with me."

It would be fatal for a chiropractor to have a sense of humor; in fact, if he had it, he never would have become a chiropractor. Should he develop it, he would forsake his "profession" and go back to ditch-digging.

BORAX POISONING

There are probably few homes in this country in which commercial borax—sodium borate—is not used both for household purposes and as a medicine. It is rather startling, therefore, to hear of a death caused by this ordinarily innocuous substance. In the case reported by Dr. Potter [1] in this issue, death occurred three hours after the patient had taken an ounce of borax. Schwyzer, in 1895, recorded a fatality following the ingestion of one-half ounce. In several other instances, quantities of one-half ounce or more are said to have been taken as an abortifacient, followed, however, by recovery. The symptoms observed in Dr. Potter's case confirm those found in the few cases on record: gastro-intestinal irritation, manifested by salivation, nausea, vomiting, colic and diarrhea; collapse, and death. Urinary phenomena are usually prominent (albuminuria, hematuria, casts, vesical spasm). These are not described in the present case, perhaps because the course was too rapid. Delirium, visual changes, and skin eruptions are also of rather common occurrence. The absence of gross necropsy lesions agrees with the usual findings. It indicates that the toxicity depends on systemic action. The symptoms in this case suggest asphyxia by swelling of the bronchial or laryngeal mucosa, an action analogous to the borax urticaria of the skin that has been observed in other cases. This would account for the unusually rapid course. The absence of such edema in other cases may explain the recovery of the patients from equally large doses. Dr. Potter raises an interesting question, i. e., the better instruction of the laity in the possible dangers of substances—used freely in the household—which are on the borderline of poisons. Such substances as borax, boric acid, Epsom salt, lime, washing soda, or even soap, are quite harmless in their respective fields, but become sources of serious danger when they are misapplied. It is doubtful whether such substances should bear a "poison" label. It may be more practical to require a "caution" label, bearing a general statement that the substance, when swallowed in excessive amount, is liable to produce serious effects; or, in the case of caustics, that they injure the eyes.

1. Potter, Caryl: A Case of Borax Poisoning, this issue, p. 378.

THE CONCENTRATION OF BILE IN THE GALLBLADDER

Chemical analyses have repeatedly demonstrated that the bile found in the gallbladder has a greater concentration than so-called liver bile, representing the secretion poured out directly from the liver into the biliary passages. There are two ways in which the concentration might be assumed to occur: first, by the abstraction of water from the bile entering the bladder, or second, by the secretion of substances through the wall of the bladder into the material imprisoned therein. The problem is one of some moment in relation to the theory of gallstone formation in the bladder. The evidence for the once heralded theory that cholesterol, the chief constituent of most biliary calculi, is added to the bile in the gallbladder is by no means conclusive. Rous and his collaborators at the Rockefeller Institute for Medical Research have favored the view that continued secretion during intermittent or partial stasis may be the dominant factor leading to the formation of gallstones. In a recent research [1] they have demonstrated experimentally that sterile bile within the gallbladder under noninflammatory conditions which prevent its discharge becomes inspissated with surprising rapidity, a result that does not follow when the bladder is replaced by a physiologically inert rubber bag. The possible result of a simultaneously continuous secretion and concentration of the bile can easily be conjectured.

1. Rous, Peyton, and McMaster, P. D.: The Concentrating Activity of the Gallbladder, Proc. Soc. Exper. Biol. & Med. **17**: 215 (May 22) 1920.

The Mosquito Nuisance.—Every locality, in fact, every home, can regulate the mosquito nuisance. Mosquitoes breed only in stagnant water, preferably quiet pools or puddles. They will breed in any kind of stagnant water, whether it be swamps, rain barrels, cisterns, or even empty tin cans. Many sagging eaves-troughs, which do not permit the water to drain after a rain, are filled with mosquito larvae. This frequently accounts for mosquitoes in sections where apparently there are no visible breeding places.—*Buffalo San. Bull.*, June 30, 1920.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Personal.—Dr. Zack Causey has been appointed superintendent of the Cochise County Hospital.

Free Clinic at Maricopa.—The Maricopa County Health Center, organized by a citizens' committee headed by Dr. George E. Goodrich, state superintendent of public health, in association with the Arizona Anti-Tuberculosis Association, has established the first free clinic in the state.

ARKANSAS

Physician Convicted.—It is reported that Dr. Henry F. Webb, North Little Rock, was recently found guilty in the United States District Court of violating the Harrison Anti-Narcotic Law.

Medical Legislation Recommended.—The governor has recommended to the legislature that provision be made for a state isolation hospital for venereal diseases, and that appropriation be made for the establishment of a bureau of public health nursing and child hygiene, for malarial control work, and for building an annex to the State Tuberculosis Hospital at Booneville.

CALIFORNIA

Personal.—Dr. Eugene S. Kilgore, San Francisco, was painfully injured, January 16, by the explosion of a German shell, a souvenir of the World War. It is feared that Dr. Kilgore's vision may be affected.

Tuberculosis Association Established.—The San Mateo Welfare and Public Health Service has been renamed the San Mateo County Tuberculosis Association and has formulated plans for the building of an addition to the San Mateo Preventorium.

New County Health Officers.—Dr. Joseph C. Christian, Galt, has been appointed health officer of Sacramento County to succeed Dr. James Loughridge, Folsom.——Dr. William F. Edmonds, Lemoore, has been appointed health officer of Kings County to succeed Dr. Charles L. Scott, Hanford.

Hospital News.—The new maternity home of the East Columbia Hospital, formerly the Garden City Sanitarium, San Jose; has been opened for the reception of patients. Dr. Charles W. DeLaney, formerly of Altoona, Pa., has been appointed surgeon in charge, and Dr. Newell H. Bullock has been made head of the obstetric and gynecologic department. ——A bill presented in the state legislature by Senator Jones, with the approval of the state board of control, proposes to extend $600,000 of state funds to counties and cities for the establishment and maintenance of tuberculosis hospitals, under charge of local authorities.——A site has been purchased on Pico Boulevard, Santa Monica, for the erection of a new hospital to be known as St. Luke's, with a capacity of 150 beds.

COLORADO

New Society.—The Colorado Neurologic Society, organized, December 20, with thirteen charter members has elected the following officers: president, Dr. Howell T. Pershing, Denver; vice president, Dr. Philip Work, Pueblo, and secretary-treasurer, Dr. George A. Moleen, Denver. Meetings will be held bimonthly.

Endowment for Medical School.—The General Education Board has offered to the University of Colorado $700,000 for the construction of a new medical school building and $50,000 a year for maintenance for a period of three years after the plant is in operation if the state will provide an additional $800,000. The university is now conducting a campaign to raise the additional funds.

DISTRICT OF COLUMBIA

Extension of Hospital Facilities.—After the erection of a nurses' home the District Tuberculosis Hospital, near Fourteenth and Taylor Streets, will be open to the general public. Limited facilities have thus far necessitated restriction of the institution's facilities to indigent tuberculous.

Volunteer Nursing Aids.—Dr. William C. Fowler, district health officer, has begun the formation of a volunteer corps of women to serve as aids in time of epidemics and disasters. The corps will not consist of professional nurses, but of women who can spare the time and are willing to take a brief preparatory course under direction of the Red Cross.

ILLINOIS

Tuberculosis Sanatorium Completed.—The new tuberculosis sanatorium for men at the Lincoln State School and Colony has been completed. The old sanatorium will be occupied by women patients.

Chicago

Anthrax from Shaving Brush.—A case of anthrax, attributed to infection from a new shaving brush which contained no manufacturer's label, was reported to the health department, January 31. The health department has issued a warning that all new brushes should be boiled for at least thirty minutes before use.

Additional Appropriations Criticised.—It is reported that an item in the deficiency appropriation bill reported by the appropriations committee of the House of Representatives has occasioned severe criticism. The item is for an additional $400,000 for the completion of the Speedway Hospital, near Chicago. It is further reported that the committee refused to appropriate $50,000, in addition to $121,000 heretofore allowed, for the remodeling of the Marine Hospital.

Two Thousand Prescriptions for Liquor.—The district attorney's office, it is reported, will have submitted to it a report from the office of the federal prohibition director. According to this statement, Dr. Eldorado Scott, Hyde Park, said to be secretary of the American Protective Medical Fraternity, issued close to 2,000 prescriptions for liquor last year; about 1,200 of which were for "emergencies." The press account states that up to October Dr. Scott wrote "only something like 700" prescriptions for liquor; in October, 206; in November, about 350; in December, 553, including 51 "on Christmas eve" and 55 "on New Year's eve."

INDIANA

New Hospital at Logansport.—A site comprising 20 acres has been purchased near the city limits of Logansport for the construction of the proposed Cass County Hospital for which a bond issue of $100,000 and a bequest of $30,000 by the will of John Johnson will be available.

Favor Regulation of Tuberculosis "Cures."—The Evansville Central Labor Union has adopted a resolution in favor of the passage by the state legislature of a bill designed to give authority to the state board of health for the control of all substances offered for sale as remedies for tuberculosis.

Nurses' Registration Bill.—A bill, known as the Kamman bill, for fixing the standards and qualifications for registered nurses has been introduced in the state legislature, and is under consideration by the house committee on medicine and public health. The bill authorizes hospitals with twenty beds to establish training schools for nurses, stipulates that student nurses be graduates of common schools instead of high schools, as at present, and proposes the appointment of a state board of examination and registration to be composed of three physicians and two nurses selected from lists submitted by medical and nursing societies. The bill provides for a course of two years instead of the present three year course of instruction.

IOWA

Meningitis at Tama.—The discovery of several cases of cerebrospinal meningitis at Tama has led to the promulgation of rigid quarantine regulations and the interdiction of all public gatherings.

Hospital News.—The industrial building of the Iowa State Institution for Feebleminded, Glenwood, was destroyed by fire, January 20, with a loss estimated at $50,000.——The addition to the Lutheran Hospital, Sioux City, erected at a cost of $100,000 with a capacity of forty beds has been opened for the reception of patients.

New State Health Law.—An addition to a bill of the legislative commission of code revision drafted by Dr. John W. Kime, Fort Dodge, proposes to abolish the state board of health and to substitute a state department of health with a health commissioner and a state council. The original bill recommended a lay commission composed of one physician, one sanitary engineer and one business man.

KENTUCKY

Hospital Addition.—An addition to the New Albany Hospital, comprising twelve rooms, has recently been completed.

Health Education Bureau.—In an effort to arouse more interest in public health matters the department of health education of the state board of health has established a bureau of publicity which will disseminate information on the activities of the board throughout the state.

Public Health Meeting.—An open meeting to which the public was invited was held, January 7, under the auspices of the Scott County Medical Society, for the purpose of hearing the annual report of the county health department and formulating health plans for the new year.

LOUISIANA

County Society Reorganized.—The Assumption Parish Medical Society was reorganized, January 17, at a meeting of physicians called by Dr. Frank T. Gouaux, Lockport, councilor for the Third District of the Louisiana State Medical Society.

Personal.—Dr. George S. Bel has been appointed a member of the board of administrators of the Charity Hospital, New Orleans.—Dr. F. P. Miranda, member of the Mexican National Board of Health and sanitary delegate to New Orleans, gave a demonstration of cultures of *Leptospira icteroides*, the causative agent of yellow fever, before the New Orleans Parish Medical Society, January 24.

MAINE

Scarcity of Physicians in Rural Districts.—Physicians of Houlton have notified their patients that from January 1 to May 1 they will be unable to attend obstetric patients residing more than 1 mile from Houghton owing to the scarcity of physicians and nurses and the bad condition of the roads which entails many hours of traveling in rural districts to the neglect of other patients in Houlton. They have advised that expectant mothers make arrangements to be attended at the Houlton hospitals.

MARYLAND

Unofficial Health Work.—The regular lecture at the School of Hygiene and Public Health of the Johns Hopkins University, January 31, was delivered by Dr. Livingston Farrand, chairman of the general committee of the American Red Cross, on "Volunteer and Unofficial Agencies in the Public Health Field."

Social Disease Campaign.—At a recent meeting held in Baltimore under the auspices of the Maryland Social Hygiene Society, Major-Gen. Merritte W. Ireland, Mr. Raymond B. Fosdick, former chairman of the Commission on Training Camp Activities, Dr. William F. Snow, director of the American Association for Social Hygiene, and Dr. George Walker, Baltimore, spoke on the various phases of the fight against venereal diseases.

MICHIGAN

Medicine and the Community.—At a meeting of the Highland Park Women's Club, January 20, Dr. Hugh Cabot, Ann Arbor, delivered a lecture on the development of modern medicine in relation to the community.

Combined Meeting of Societies.—Kent County Medical Society recently held a joint meeting with the medical staffs of Blodgett Memorial, Butterworth and St. Mary's hospitals, Grand Rapids, to demonstrate the advisability of discontinuing duplication of scientific work by medical meetings.

Botulism Deaths in Hospital.—One nurse and three attachés of the Blodgett Memorial Hospital, Grand Rapids, died, January 25, under circumstances which indicated that the fatal illness was caused by botulism following ingestion of canned spinach. Fifteen other attaches of the hospital became ill at the same time, several of them seriously.

MINNESOTA

Personal.—Dr. Walter E. List has tendered his resignation as superintendent of the Minneapolis General Hospital.

Medical Officers Organize.—At a meeting held at Fort Snelling, January 11, the Northwestern Medical Officers' Association of the World War was organized and the following officers were elected: president, Dr. Thomas J. Maloney, St. Paul; vice president, Dr. Arthur S. Hamilton, Minneapolis, and secretary, Dr. Francis J. Savage, St. Paul.

Success of Clinic Week.—Approximately 500 physicians participated in the activities of the St. Paul Clinic Week, held at St. Paul, January 10-14, under the auspices of the Ramsey County Medical Association. Drs. William J. Mayo, Rochester, and Bertram W. Sippy and Joseph Beck, Chicago, were among the out of town clinicians who spoke before the meetings.

MISSISSIPPI

New Hospital.—Oxford Hospital, which has been in course of construction for many months, has been opened for the reception of patients.

State Child Welfare Bureau.—The Mississippi State Board of Health has established a bureau of child welfare to which will be delegated all duties in connection with the medical inspection of schoolchildren. Dr. Felix J. Underwood, Aberdeen, field director of rural sanitation of Monroe County, has been named chief of the new bureau.

MONTANA

New Health Officer.—Dr. Arthur E. Myrich, Stanford, has been appointed health officer of Judith, Basin County.

Child Health Survey.—The state board of health is conducting a child welfare survey in Missoula. The questionnaire includes inquiries relating to the sanitation of homes and the health of children as related to their hours of work, sleep and play. The purpose of the survey is to obtain reliable statistics on which to base legislation designed to reduce infant mortality.

NEVADA

Laboratory Director Resigns.—Dr. Gustav B. Ruediger, Reno, has resigned his position as director of the state hygienic laboratory, affiliated with the University of Nevada.

NEW JERSEY

Personal.—Dr. Harry Garret Miller was appointed health officer of Millville at the recent organization meeting of the board of health.

Joint Legislative Committee.—At a meeting of the Mercer County Medical Society, held at Trenton, January 12, a resolution was adopted favoring cooperation with the dentists, druggists and nurses in the appointment of a single joint committee to study all proposed state legislation relating to public health and to the professions.

Industrial Physicians' Association.—A New Jersey chapter of the American Association of Industrial Physicians and Surgeons was organized, January 12, at a conference in the headquarters of the state department of labor at Newark. The following officers were elected: president, Dr. G. Dickerson, Jersey City; vice president, Dr. Charles B. Lufburrow, Plainfield, and secretary-treasurer, Dr. Frank Pinneo, Newark.

NEW MEXICO

Health Officials Appointed.—Dr. J. F. Docherty, formerly of Raleigh, N. C., has been appointed health officer of Bernalillo County and Albuquerque to succeed Dr. Frederick H. Busby; Dr. Jacob S. Easterday, has been appointed county physician, and Dr. Edmund M. Clayton, city physician.

NEW YORK

Tuberculosis and Public Health Conference.—A conference of the state committee on tuberculosis and public health of the State Charities Aid Association was held at the Hotel Biltmore, January 22. Sir Arthur Newsholme delivered an address on the "Retrospect and Outlook on the Tuberculosis Problem."

Mental Hygiene Legislation.—A constitutional amendment to eliminate the state lunacy commission and to establish in its place a commission on mental hygiene to inspect all institutions for the care of the insane, epileptics, idiots, feebleminded or mental defectives which was passed by the legislature last year, has been introduced in the state senate.

Hearing on Jersey Fumes.—A hearing on the subject of the pollution of the atmosphere by acid fumes from New Jersey plants opposite Riverside Drive, Manhattan, was held at the New York Academy of Medicine, January 29, under the presidency of Dr. Hermann H. Biggs, state health commissioner. Dr. Theodore Horton, engineer of the state health department,

testified that investigation disclosed that the pollution of the atmosphere had decreased considerably since apparatus for the control of the objectionable fumes had been installed.

New York City

More Reportable Diseases.—The New York City Board of Health, at its meeting, January 28, passed resolutions placing sleeping sickness (lethargic encephalitis) and botulism on the list of reportable diseases.

Benefit for French Hospital.—A benefit for the French Hospital was given in the Metropolitan Opera House on the evening of January 22. The proceeds of the performance, Leoncavallo's version of "Zaza," netted the hospital $10,000.

Personal.—Dr. Simon Flexner, director of the Rockefeller Institute for Medical Research, has been elected an honorary member of the Société belge de médecine.——Dr. Pearce Bailey has been awarded a Distinguished Service Medal in recognition of his services as chief of the division of neuropsychiatry of the Surgeon-General's office.

Heart Diseases in Schoolchildren.—A cardiac committee of the board of education is conducting a campaign to raise a fund of $100,000 for the prevention and treatment of heart disease among the schoolchildren of the city. In a recent physical examination of 516 pupils in one district school of Brooklyn, 9 per cent. were found afflicted with cardiac diseases.

Children's Hospital Acquires New Site.—The Children's Hospital, 203 Second Avenue, has purchased a site at 232 East Fifteenth Street for the construction of a new institution, plans for the construction of which call for a building of twenty stories with accommodations for 500 patients. When the new building is completed the present hospital will be used as a dispensary.

Investigation of Drug Hospitals.—Chief Magistrate William McAdoo has requested a grand jury investigation of the conditions of municipal institutional buildings on Randall's Island and Riker's Island, where drug addicts are committed. It is declared that the buildings are insanitary, that conditions at the women's hospital are a disgrace to the city and that it is impossible to treat drug addicts properly at these institutions. Owing to the fact that facilities at Bellevue, Riverside and the Metropolitan hospitals are inadequate to give drug addicts prolonged treatment patients are being sent to Riker's Island, which is already overcrowded.

NORTH CAROLINA

Eugenic Marriage Law.—Representative Bellamy has introduced in the legislature a bill which stipulates that all applicants for marriage licenses shall furnish with their application a certificate from a reputable licensed physician resident in the county in which the marriage license is sought, or by the county health officer, testifying that the applicant has submitted to an examination and has been found in sound and healthy condition, physically and mentally.

Hospital Notes.—Reconstruction of the Clarence Barker Memorial Hospital at Biltmore will be begun immediately on a site on Brandon Hill. The new institution will cost approximately $250,000 most of which will be raised through the sale of the old property and the insurance money collected on account of the damage recently sustained.——A plan for a proposed addition to the City Memorial Hospital at Winston-Salem was presented to the board of aldermen by a committee representing the physicians of the city under the leadership of Drs. Frederick M. Hanes and Everett A. Lockett. The proposed addition will furnish accommodations for forty-two patients and will tend to relieve the acute shortage of hospital facilities. A fund of $47,250 from the Sterling Smith estate is available for the erection of an addition to be known as the Sterling Smith Memorial Building.——The Anson Sanatorium at Wadesboro has been enlarged by the construction of two annexes.

OHIO

County Health Officials.—Dr. Albert S. Stemler has been appointed health officer of Fayette County.——Dr. Frank E. Ayers has been reelected health commissioner of Mercer County.

Physicians Volunteer Services.—At a meeting of the Ross County Medical Society, January 13, the society agreed to make a physical examination of all employees of restaurants and hotel dining rooms as stipulated in new regulations promulgated by the health department of Chillicothe. Members of the society will be assigned in groups to conduct the examinations until all employees have been examined. A nominal fee will be charged for the service and the proceeds will be turned over to the health department.

OREGON

Branch of Health League.—At a meeting of the Pope-Yamhill-Marion Medical Society held, January 18, the Salem Branch of the Oregon League for the Conservation of Public Health was formally organized.

PENNSYLVANIA

Sentenced for Illegal Operation.—It is reported that Dr. David W. Crosthwaite, Altoona, who was confined to the Blair County jail for several months on a charge of performing a criminal operation, was given a suspended sentence, January 4.

Quarantine Patrol.—In order to demonstrate the efficacy of rigid quarantine, the health officials of Coatesville have detailed special officers to patrol the city and to enforce the quarantine laws by arresting any person found leaving a home where contagious disease exists.

Tuberculosis Dispensary.—A free tuberculosis dispensary has been opened at Providence Hospital, Beaver, for the treatment of indigent patients of Beaver Falls and northern districts through arrangements between the hospital management and the state board of health.

Health Lectures.—As part of the health day program during "Citizens' Week" in Johnstown, Dr. William Charles White, Pittsburgh, president of the National Tuberculosis League, delivered an address on "The Tuberculosis Menace in Pennsylvania." Dr. Edward A. Weiss, Pittsburgh, spoke on "The Truth About Cancer," and Dr. Joseph J. Meyer discussed the subject of "Social Diseases in Pennsylvania."

Philadelphia

Officers Elected.—The Medical Club of Philadelphia has elected the following officers: president, Dr. Barton Cooke Hirst; vice presidents, Drs. Hobart A. Hare and Alexander MacAlister; secretary, Dr. William S. Wray, and treasurer, Dr. Lewis H. Adler, Jr.

Mary Scott Newbold Lecture.—Major-Gen. Merritte W. Ireland delivered the fourth of the Mary Scott Newbold lectures at the College of Physicians, February 4, on "The Achievement of the Army Medical Department in the World War in the Light of General Medical Progress."

Hospital Staffs.—At the regular meeting of the staff of St. Joseph's Hospital, January 25, the following officers were elected: president, Dr. Charles F. Nassau; vice president, Dr. Melvin M. Franklin; secretary, Dr. Pierre N. Bergeron, and treasurer, Dr. John F. X. Jones.——Dr. Melvin M. Franklin has been appointed visiting orthopedic surgeon to St. Mary's Hospital.

TENNESSEE

New Tuberculosis Sanatorium.—A new tuberculosis sanatorium is being constructed at the Eastern Hospital for Insane, Lyon's View. The building will cost $35,000 and will have accommodations for seventy-five patients.

Society Adopts Physicians' Motor Insignia.—At a recent meeting of the Memphis and Shelby County Medical Society the members were notified that an agreement had been reached with the police department by which physicians are permitted to park their cars in restricted zones for a period of three hours, provided the cars carry some distinguishing device and the physicians pledge themselves not to violate other automobile ordinances. The society voted to adopt the insignia of the American Medical Association to mark the cars of its members.

TEXAS

Physicians to Build Office Building.—Dallas County Medical Society has appointed a committee of six physicians to conduct a campaign for securing funds for the erection of a physicians' office building. Dr. Charles M. Rosser is chairman of the committee.

Removal of Medical School Undecided.—The discussion of the question of moving the medical department of the University of Texas from Galveston to Austin or some other more central city of Texas has been postponed until the final location of the University of Texas has been decided by the legislature. The decision is related to the question whether the university is to be retained on its present small

campus or whether it is to be moved to a larger tract of land in the outskirts of Austin. To provide for further expansion at its present site would require the expenditure of large sums of money for valuable land, whereas on the new site—which has already been provided—the appropriations can all be devoted to the construction of new buildings.

WASHINGTON

City Must Abandon School Clinics.—According to a recent decision of the state supreme court, Seattle must abandon its school clinic and must discharge from its employ all physicians, nurses and dentists now giving free medical examinations and treatment to schoolchildren.

Health League Completes Organization.—The Washington League for the Conservation of Public Health has opened headquarters at 716 White Building, Seattle, and has elected the following officers: president, Dr. Herman P. Marshall, Spokane; vice presidents, Drs. Donald A. Nicholson, Seattle, Hiram E. Cleveland, Burlington, John R. Brown, Tacoma, and George C. Bryan, Walla Walla; secretary, Dr. Paul B. Cooper, Yakima; treasurer, Dr. Philip V. VonPhul, Seattle, and executive secretary, Mr. J. W. Gilbert.

CANADA

Hospital News.—The Department of Indian Affairs, Ottawa, has contributed $5,000 for the erection of a new wing to the Lady Minto Hospital at Cochrane, to care for the increasing number of Indian patients. The construction of a new nurses' home containing 104 rooms and costing $300,000 is contemplated for the Hamilton General Hospital.

Personal.—Dr. Henry Fowler, secretary to the Mission for Lepers to Eastern Asia, and Dr. Thomas Cochrane, founder of the Pekin Medical College, delivered addresses on medical conditions in the Orient at the annual meeting of the Toronto Leper Mission, January 28. Dr. Fowler is on his way from England to the Far East for the purpose of inducing the governments of Siam, China, Japan and Korea to pass a law for the segregation of lepers.——Dr. T. G. Routley, Toronto, secretary of the Ontario Medical Association, will deliver a series of addresses throughout that province on the question of raising the embargo on importation of arsenical products of the arsphenamin type.

GENERAL

Surgeons Visit South America.—Drs. Franklin H. Martin and Thomas J. Watkins, Chicago, representing the American College of Surgeons, sailed from New York for South America last week, continuing the effort to induce Latin American organizations to affiliate with the college.

Cost of Medical Education.—According to the records of the Columbia University, New York, recently published by university authorities, the total cost of educating a physician at the College of Physicians and Surgeons is $4,600, of which the student contributes in tuition and other fees $1,280.

Health Association Meeting.—The annual meeting of the American Public Health Association will be held at New York, November 14-18. A special program, designed to present a review of the progress of the various branches of public health within the last fifty years, will be prepared for the celebration of the semicentennial of the association, which was organized in New York, April 18, 1872, under the presidency of Dr. Stephen Smith.

Chinese Physician Visits Association Headquarters.—Dr. Y. Tsching is making a tour of the principal medical centers of the United States for the purpose of studying the medical organizations, schools and institutions of the country, as a representative of the department of education of the Chinese government. In the course of his visit to Chicago, he spent several days at the Association headquarters to familiarize himself with the details of its organization and activities.

Western Tuberculosis Sanatoriums Crowded.—Reports indicate that facilities of hospitals and contract hospitals of the U. S. Public Health Service in the semiarid Southwest are severely taxed with tuberculous veterans, while the influx from the East continues at such a rate that it has been found necessary to transfer patients from Tucson, Ariz., and other Western hospitals to sanatoriums at Asheville, N. C., and other south Atlantic points. In Tucson every hospital bed is occupied and the hotels and boarding houses are overcrowded. Similar conditions prevail at California sanatoriums. It is estimated that in Tucson alone over 500 tuberculosis patients are unable to find sanatorium accommodations.

Rockefeller Foundation Hookworm Expedition.—The International Health Board of the Rockefeller Foundation, New York, has organized a scientific expedition to study hookworm larvae in Trinidad, West Indies. The expedition will leave for Trinidad about May 1 and will continue its investigations for four months, in connection with the intensive campaign now being waged in an effort to eradicate the disease. Dr. William Walter Cort, associate professor of helminthology in the School of Hygiene and Public Health of Johns Hopkins University, has been appointed director of the expedition and he will be assisted by Dr. J. E. Ackert, professor of parasitology of the Kansas State Agricultural College, and Dr. D. L. Augustine, assistant in medical zoology at Johns Hopkins University. Dr. C. E. Payne, a member of the International Health Board, is in charge of the campaign in Trinidad.

Honors to Dr. William Williams Keen.—On January 20, physicians, scientists and many notable citizens united in honoring the eighty-fourth birthday of Dr. William Williams Keen. Nearly 600 men attended the dinner at Bellevue-Stratford Hotel, Philadelphia. A life size bust of Dr. Keen was presented to him in behalf of the medical, scientific and civil organizations to which he has given so much effort. There were also presented to him three volumes containing letters and poems written in his honor especially for this occasion by many notable persons. The speech of presentation was made by Surgeon-General Ireland who characterized Dr. Keen as a "superman all through his career." Other speakers were the Rev. W. H. P. Faunce, president of Brown University, Dr. Keen's alma mater, Dr. W. H. Welch of Johns Hopkins University, Dr. J. C. DaCosta, Dr. Keen's successor as professor of surgery in Jefferson Medical College, and Dr. David J. Hill, former United States ambassador to Germany. Dr. George de Schweinitz, toastmaster, was introduced by Dr. William D. Robinson, chairman of the committee which arranged the celebration.

Bust of Dr. W. W. Keen, presented to him at eighty-fourth birthday celebration.

Bequests and Donations.—The following bequests and donations have recently been announced:

Burnham Hospital, Champaign, Ill., $100,000, by Mrs. Newton M. Harris, Champaign.

Hahnemann Hospital, Philadelphia, $1,000, by the will of Susan R. Taylor.

Visiting Nurses' Association and Children's Memorial Hospital, Chicago, and King's Daughters Hospital, Frankfort, Ky., $25,000, and United Charities, $20,000, by the will of Mrs. Lina A. Waller, Chicago.

Kitchener-Waterloo Hospital Victorian Order of Nurses and Kitchener Orphanage, after the death of his widow, the proceeds of an estate valued at $65,000, by the will of John G. Bricker, Kitchener, Ont.

American Oncologic Hospital, Philadelphia, $1,000, by the will of Ann Cressan.

Episcopal Hospital, Philadelphia, $5,500, by the will of Hannah Kochersperger.

Methodist Episcopal Hospital, Philadelphia, $5,000, for the endowment of a bed in memory of her stepson, by the will of Mrs. Anna Roberts, Pottstown.

Eye, Ear, Nose and Throat Hospital, New Orleans, a donation of $50,000 to the building and equipment fund of the institution, by Mrs. John Dibert.

For the construction of a hospital at Wayland, Mass., $200,000, by the will of Jonathan M. Parmenter.

New York Institute for the Blind, New York, $1,000, by the will of Mrs. Sarah Matilda Mygatt.

Hebrew Hospital, Baltimore, for the establishment of a dental clinic, $10,000, by Dr. Harry Adler.

FOREIGN

Institute for Medical Bibliography.—Naples has now an institute for medical bibliography with its own journal, the *Rivista della Stampa medica*, a monthly, published at Via Francesco del Giudice 18, Naples, Italy. It makes translations and summaries on demand and the *Policlinico* hails its foundation as filling a long felt want.

Journal of Laryngology and Otology.—The *Journal of Laryngology, Rhinology and Otology*, which was founded in 1887 by Morell Mackenzie and Norris Wolfenden, has been

purchased from its former owners, a well known publishing house, and has become the property of the profession. It will be continued as the *Journal of Laryngology and Otology* under the editorial supervision of Drs. A. Logan Turner and J. S. Fraser. The place of publication is Edinburgh.

Tribute to Morselli.—The pupils and friends of Prof. E. Morselli recently celebrated the fortieth anniversary of his incumbency of the chair of psychiatry at the University of Genoa. He is called the Italian champion of psychology, neuropathology, psychiatry and anthropology. The celebration occurred during the Italian Congress of Neurologists and Alienists, held at Genoa in his honor, and a fine oil painting was presented to him by a public subscription, a copy of Raphael's Madonna of the Candelabra, in a genuine sixteenth century frame.

Dearth of Physicians in Central Europe.—Investigations made by the Rockefeller Foundation indicate that the countries of central Europe, with the possible exception of Austria, suffer from a shortage of physicians. Thus, in Poland less than 2,000 physicians are said to be available to care for the 25,000,000 inhabitants, and in Serbia it is stated there are less than 300 physicians outside of the army medical officers. In its efforts to rehabilitate the medical schools of central Europe, the Rockefeller Foundation has decided to aid in the establishment of a high grade medical school at Belgrade.

International Conference for Nomenclature of Diseases.—The government of France issued a summons to an international conference to revise the nomenclature of diseases and statistics, to conform to the progress of science since the present nomenclature was adopted. The session at Paris of the international commission for the purpose was attended by representatives of forty-two governments. It is said to be the first scientific gathering attended by representatives of all the belligerent countries, the Central Powers as well as the Allies. The new nomenclature adopted went into effect with the present year.

Graduate Courses.—The medical journals from the leading medical centers in all countries contain many notices of short courses of lectures and practical training in various fields of medicine offered to physicians by specialists. These courses aim to crowd a vast amount of instruction into a few weeks. Thus Rome offers a "corso di perfezionamento" in industrial medicine to last for three months and to include the hygiene, pathology, and the legislative and medicolegal aspects of industrial, railroad and agricultural work. Certificates are issued to physicians completing the course and paying the fee, the total expenses amounting to nearly 340 lire.

Italian Congress of Radiology.—The Third Italian Congress of Medical Radiology, recently held at Rome, was attended by a large number of radiologists. Prof. Ghilarducci presided, and reviewed the extensive work in this field by the Italians. Bertolotti discussed radio-activity from the standpoint of biology and chemistry, and Ponzio—both of the latter are members of the Turin medical faculty—related his personal experiences with the radiotherapy of cancer and presented an exhaustive review of the present status and the outlook of this field of medicine. The discussion of the papers was lively and illuminating; fully a hundred communications were presented, including Perussia's chemical and radiologic research on the heart and large vessels.

Deaths in Other Countries

Robert Jared Bliss Howard, London, a graduate and at one time demonstrator of anatomy and surgery at McGill University, and assistant surgeon and pathologist to Montreal General Hospital, January 10.——Dr. **J. María Rodríguez** of Buenos Aires.——Dr. **J. Cécikas** of Athens, one of the leading physicians of Greece and a contributor to French, English and German medical journals, editor for five years of the *Grèce médicale*.——Dr. **Kermorgant,** inspector-general of the medical department of the army for the colonies of France, in charge of public hospitals, vaccine and antirabies services and laboratories. He founded and edited the *Annales d'hygiène et de médecine coloniales* and was long on the editorial staff of the *Archives de médecine navale*. He had published numerous works on the prophylaxis of disease in the tropics, especially for expeditions and explorers, on snake poisons, welfare work for native children, etc.——Dr. **A. Fortunati,** professor of ophthalmology at the University of Rome, author of numerous works on trachoma, detachment of the retina, etc., aged 67.——Dr. **C. Rusca,** assistant at the pediatric clinic at Milan, aged 32.——Dr. **W. Benninghoven,** a dermatologist of Berlin, noted for his teaching models.——Dr. **S. Manghinas,** formerly professor of surgery at the University of Athens.

Government Services

British Tribute to American Physicians and Nurses

Surgeon-General Ireland has received from Lieut.-Gen. Sir John Goodwin, director-general of the army medical services of the British army, an account of a testimonial dinner given to the Royal Army Medical Corps in London, at which the Earl of Midleton presided. Addresses were delivered by Sir Edward Ward, Hon. Winston Churchill, secretary of state for war, Field Marshal Haig, Lieut.-Gen. Sir Alfred Keogh, formerly director of medical services, and Sir John Goodwin. In his speech the latter paid the following tribute to American physicians: "I should like to say one word on the subject with which I was rather closely connected, and that is the amount which America did for the medical service, and also for the army in this war. I was sent out to America on a mission just after that nation came into the war. We were then in serious straits as regards shortage of medical and nursing personnel. I at once placed the whole situation frankly before the War Secretary, Mr. Baker, and before the head of the American medical service, General Gorgas. I cannot express to you the cordial way in which I was received, the sympathetic hearing which was accorded to me, and the generous response with which I met. General Gorgas, Mr. Baker, the American Army Medical Service, and not only they, but the whole medical profession of America, placed everything at my disposal, with the result that within a very few months over 1,000 American doctors and more than 700 nurses, equipped and uniformed by the American Army, were placed unreservedly, and without question, entirely at the disposal of the British armies. Had it not been for the wholehearted help afforded to us by America I hardly like to think of what might have happened in 1918."

Organization of Medical Regiments

As a substitute for the old sanitary train, new medical regiments have been established in the U. S. Army by order of the Adjutant-General. The regulations provide that the aggregate strength of the medical regiment for war shall be sixty-eight commissioned officers and 860 enlisted men, and for peace twenty-five commissioned officers and 277 enlisted men. At peace strength, the medical regiment, under command of a colonel, consists of a regimental headquarters, a sanitary company, a mule-drawn ambulance company, a motorized ambulance company, a motorized hospital company, a medical supply section, a medical laboratory section and a veterinary company. Enlarged to war strength the regiment includes a regimental headquarters, a service company, a sanitary battalion, an ambulance battalion, a hospital battalion, a medical supply section, a medical laboratory section and a veterinary company.

Medical Officers' Reserve Training School

A final effort will shortly be made by the Army Medical Department to induce all Class A medical schools of the country to inaugurate an officers' reserve training school. Up to this time five universities are operating reserve schools, to which medical officers have been assigned as instructors. Two additional schools have been added to the list during January, namely, at the University of Minnesota Medical School, where Lieut.-Col. Henry H. Rutherford has been named professor of military science and tactics, and the Johns Hopkins Medical School, with Major Howard H. Baily as instructor. The University of Oregon Medical School, Portland, has signified its intention of installing a reserve officers' unit.

Measles Statistics of the Army

The records of admissions for measles show that the incidence of the disease is declining at five of the eight camps at which it has been epidemic. At Camp Grant, however, the trend of the measles outbreak is upward, and the same situation prevails at Camp Travis, although at the latter post there was a decline for one week in January; at Camp Sherman the measles rate has been increasing steadily during the last month. In spite of the measles outbreak the admission and death rates of pneumonia have not risen.

Review of Public Health Laws

The annual compilations of "State Laws and Regulations Pertaining to Public Health" for 1917 and 1918 have just been issued by the U. S. Public Health Service. They contain the text of all statutes on health subjects passed by the various state legislatures during the respective years. In 1918, thirty-two states enacted laws dealing with the prevention of venereal diseases, and more laws were passed on this phase than on any other subject pertaining to public health.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 10, 1920.

John Beattie Crozier

John Beattie Crozier, physician and distinguished philosopher, historian and political economist, has died in London at the age of 71 years. His reputation was made outside his profession, and his name is unknown to the great majority of its members, for few of them take interest in the highly intellectual work to which he devoted his life and for which he sacrificed himself. Born of a border family among the little Scottish colony of Galt, Canada, he was educated at Toronto University, where he took the degree of M.B. in 1872. From his earliest days he was interested in philosophy, and as he felt that he could not both pursue it and earn his livelihood as a physician in Canada, he came to London. Here he practiced for some years but not with much financial success. This was only to be expected, for he declined work which might have led to a good position because it interfered with his studies. At first he embraced the doctrine of evolution expounded by Herbert Spencer in his "First Principles," which seemed to show that religion and science are alike manifestations of a persistent, inscrutable force. But the later "Principles of Psychology" of that writer seemed to him an unmitigated and desolating materialism. He then studied the metaphysicians from Descartes to Hegel, but they seemed to him never to have established a true relation between mind and brain. His own difficulty was that while he accepted Spencer's account of mind as arising from molecular vibrations in the nervous system, he could not admit that virtue differed from vice, or right from wrong only in the number and complexity of these vibrations. On the contrary, he held that they differed in kind and represented an ideal in the mind which came from without and sat in judgment on all its thoughts and feeling. He embodied this view in an article entitled "God or Force," but no editor would take it. He then issued it as a pamphlet with articles on Carlyle, Emerson and Spencer, which made up a small book on "The Religion of the Future," published in 1880. It fell almost dead from the press. Undaunted, he undertook the more ambitious task of tracing the ideal through history and determining how far civilization was advanced by the factors of religion, government, science and material and social conditions. A study of previous writers convinced him that much help could not be obtained from Hegel, who attended only to the religious factor; from Comte, in spite of his three stages; from Buckle, whose doctrines had become obsolete, or even from Spencer, who made progress depend on abstract and impersonal laws rather than on concrete, human facts. He arrived at the conclusion that progress rested chiefly on material and social conditions, that government took its character from them, that things made their own morality, that improved dwellings and better education had effects which no mere teaching could achieve, that science was the impelling factor which amended the conditions and, by overthrowing the religious philosophies opposed to it, made way for religion itself as the factor that completed the ideal. This survey appeared in 1885 as a volume entitled "Civilization and Progress," but it received no immediate attention. Three years later a demand for it arose, and eventually it reached a fourth edition and was translated into Japanese. His next important work was a "History of Intellectual Development," of which the first volume occupied him from 1892 to 1897. He endeavored to show that the course of thought from the Greeks onward largely followed laws. Reviewing the transitory forms of supernaturalism, he kept his belief in a coordinating power not ourselves making for righteousness. This book had an excellent reception. The government then came to his aid and awarded him a pension for his services to philosophy, and his old university, Toronto, conferred on him the degree of LL.D. He had planned a second volume on the connection between ancient and modern thought, but impaired eyesight prevented the necessary research and he turned to the completion of his autobiography, a most interesting work. On the advice of Lord Morley, he confined a further volume to the practical problems of reconstruction as affecting Great Britain, France and the United States in the nineteenth and twentieth centuries. In this book his main contention was that present ideals, if not to mislead or end in fanaticism, must be tested by the fate of the past ones, and that to avoid pitfalls statesmen ought to study the previous course of civilization. The *Times* described the book as the work of a man not only enlightened, but singularly open minded and impartial, who rarely wrote a page without a striking phrase or sentence. In a later work entitled "The Wheel of Wealth" he maintained against economists that production and consumption are continuously passing into one another in a circular movement. In 1911 appeared "Sociology Applied to Practical Politics," in which he maintained the great value of science in solving such problems as socialism, free trade and imperial preference. Then his sight no longer allowed any close research. In 1917 he published "Last Words on Great Issues," a remarkable survey of the democratic, economic, intellectual and religious movements brought about by the war, with a summary of his own creed. April 23, 1919, he received a letter of congratulation signed by Lord Morley, Lord Bryce, Sir William Osler, Frederic Harrison and other distinguished men, expressing appreciation of "his eminent services to British scholarship and speculation, and of his unselfish endeavors for human welfare."

An Unusual Source of Tetanus

An inquest has been held on a baby who died at the age of 5 days from tetanus. The source of an infection was unusual: An ointment had been applied to the child. The pot of ointment was submitted with six similar unopened pots to the ministry of health for analysis. The report showed that there were disks of coarse paper in the unopened pots which separated the stopper from the contents. These disks contained tetanus germs. A representative of the firm which supplied the ointment said that this was the first complaint received and that steps were being taken to insure that paper disks would not be used in future.

Vital Statistics

The recently issued registrar-general's report for 1919 contains some interesting facts. Some of the most important are: 1. Great increase in the number of young widows remarrying. 2. General increase in marriages of middle aged persons, especially among bachelors. The number of widows remarrying under the age of 25 was 10.7 times and between 25 and 35 times as great as in 1911. These are explained by the great number of young widows created by the war. But there is also an increase in the marriages of widows over 45 which

cannot be explained in this way. It is partly due to the general increase of marriages at this time of life in men and women both single and widowed. It is manifested in its most extreme form by bachelors, whose marriages at ages over 45 both in 1915 and in 1918 were twice as numerous as in 1911. 3. Estimated loss of births due to the war, half a million, very similar to that of deaths on active service. 4. General decline of infant mortality, especially in London. Cancer forms the one great exception to the general tendency for the mortality at most ages to decline. The death rate from measles and whooping cough is by far the lowest on record.

PARIS

(From Our Regular Correspondent)

Dec. 31, 1920.

The Taxation of Medical Journals

Dr. Pierra, secretary of the Association de la presse médicale française, recently communicated to the medical group in parliament the resolution passed by the association demanding that the tax on the volume of business, as applied to medical journals, be either removed entirely or at least determined not by the number of subscribers or the number of copies sold but by the amount received for advertising.

This resolution seems justified by the precarious position in which the medical press in general has been placed by the advances in the cost of labor and material, which have increased the cost of publication by at least 500 per cent. The situation has been such that a large number of journals have discontinued publication since the war. Those that continue to appear have been obliged to reduce the number, and sometimes even the size, of their pages. Pierra likewise emphasized the importance of medical journals from the standpoint of their value as promulgators of French ideas in foreign countries, and pointed out in this connection that our economic expansion is closely connected with our intellectual influence in the world. He also brought out the point that our competition is almost solely German, and stated further that, before the war, French medical journals were widely read in Spanish speaking countries, some French journals having even gone so far as to publish separate Spanish editions for circulation in South America and Spain. It was evident that such journals carried French ideas and influence to these various countries. Today a number of German journals are published in Spain in the Spanish and even in the French language, all of which spread German thought and influence among our neighbors. Pierra concluded by saying that he regarded it as a matter of vital national interest to relieve the French medical press from the burdens of taxation, thus permitting it to continue to play a part in the dissemination of French ideas throughout the world.

The medical group in parliament has decided to support the resolution in question and to take such steps as may seem necessary in order to bring the matter before the minister of finance.

The Milk Question Again

At the last meeting of the medical group in parliament, which was presided over by Dr. Chauveau (senator), one main topic discussed was the commotion caused in the ranks of the medical profession by the recent order of the prefect of the department of the Seine requiring that sick persons, old people and children, for whom milk is an imperative necessity, procure a certificate, entitling them to prior consideration, from some physician of the public charities board (THE JOURNAL, Jan. 29, 1921, p. 324). After a discussion, in which several of those present took part—Prof. Pinard, Dr. Chauveau and others—it was decided: (1) to approve the restriction of the sale of milk in cafés, tea rooms, restaurants, hotels, etc.; (2) to recommend to the prefect of the department of the Seine that, in the case of young children and old people, only a birth certificate be required in order to establish the right to prior consideration in securing milk, with the added provision that children must be under 3 years of age and aged persons over 65; (3) patients should not be required to furnish any further proof of their need than the certificate of the physician in charge of the case, unless there is evidence of frequent abuse of the privilege.

Physical Culture

Under the name of Cercle d'études medico-sportives, a society has been formed which will take up the study of all questions of a purely scientific nature pertaining to physical education, physical culture and general sports, both from the physiologic and the pathologic point of view. It will endeavor at the outset to unite the efforts of all colleagues who are interested in these questions, as up to the present time these have not been grouped together in any society. The society proposes, furthermore, to standardize instruction in these subjects and all official documents relating thereto. Such topics as the physiologic aspects of physical training, and the amount and type of physical culture required by various age groups illustrate the type of questions that will be studied.

The Tax on Physicians' Incomes During the War

M. Saget, member of the chamber of deputies, having addressed an inquiry to the minister of finance as to whether a tax inspector can, without violating the right of privileged communication, demand of a physician that he produce the book containing the names of his clients, the nature of their disease and the amount of the fees received, is in receipt of the following reply:

Physicians, like all others who are subject to taxation, must exhibit to the tax commissioners all documents that may be necessary to establish the basis for taxation. In case they are thus led to divulge the name of a client they do not render themselves liable in any way, since it is evident that they are only complying with a legal requirement, and, furthermore, the financial agents to whom the information would be furnished are themselves bound by the right of privileged communication.

The New Officers of the Academy of Medicine

At a meeting held December 28, the Academy of Medicine elected the following officers for the year 1921: president, Dr. Richelot; vice president (president for 1922), Professor Bourquelot, and annual secretary, Professor Achard.

The Bestowal of an American Medal on a French Scientist

The American Genetic Association has bestowed the Frank N. Meyer medal on Dr. Trabut, a botanist of repute who is a member of the faculty of the University of Algiers. Trabut is attached to the botanic service of Algeria.

Budget of the Board of Public Charities

The general report on the budget and the receipts and expenditures of the Assistance publique shows, by numerous interesting statistics, the great influence that the war had on the administration of public charities in Paris. Before the war the municipality of Paris contributed 26 million francs annually toward the work of the society. In order to provide the society with the funds needed to support all their services during the war, this fund was increased to 145 million francs, an augmentation of 457 per cent., which signified an increase of 72 per cent. in the total budget. In 1919 the expenditures for the assistance of the needy by the various bureaus of charities amounted to 147 million francs. The budget for 1921 amounts to 228 million francs, 194 million of which are for hospitals and municipal shelters.

BELGIUM

(From Our Regular Correspondent)

Dec. 31, 1920.

The Development of Cuban Children

At a meeting of the Société d'anthropologie of Brussels, M. Rouma communicated the result of 85,000 observations on 4,000 children in Cuba. Several interesting facts were brought out that are worthy of note. During school age the waist measure of the negro and the mulatto increases more rapidly than that of the white child. At the age of 6 the waist measure of all three is about the same, but at the age of 12 the waist measure of the black child exceeds that of the white child by 5 cm. The weight per centimeter of waist measure increases regularly from ages 6 to 14. The specific gravity of the body gradually diminishes during this period. The specific gravity for the three races is lower than the specific gravity of children of the temperate and frigid zones. The body measurements of white children presented different proportions from those of the negro. The latter had longer legs and arms, but a shorter trunk and a smaller thorax. The mulatto occupied an intermediate position. The dimensions of the thorax were proportionate to the waist measure, being greater in the white child than in the negro and the mulatto. The chest expansion of the white child was at all ages superior to that of the black child. The vitality index was higher in white children of all ages from 6 to 14 than it was in black children, but the muscular system is more developed in negro children. An examination into the physical development in relation to the season of birth brought out the fact that the excessive heat of the Cuban summer exerts an unfavorable influence on the physical development of white children born during the summer season. This unfavorable influence was not apparent in the negro child. Following this communication by Rouma, the Société d'anthropologie expressed the wish that similar investigations might be carried out in Belgium.

Child Welfare

In a previous letter were described the activities of the various committees that were organized during the war, having for their purpose the amelioration of the conditions of existence as affecting children, and the combating of the increase in infant mortality. The establishment of canteens for schoolchildren, the consultation hours for infants, and the organization of colonies for weak children were referred to. To crown all these enterprises and to perfect the welfare work, the results of which have been so encouraging, Belgium feels it a duty to carry forward this preeminently humanitarian task. In order to secure more exact information in regard to the factors that influence the betterment and the decadence of the human race, to discover to what extent the facts and signs justify legislative action, and to inquire into the best means of bringing about a cooperation of the existing societies and the isolated workers, the Belgian government is organizing an international child welfare congress. The principal questions placed on the order of the day are: (1) neglected children and juvenile courts; (2) abnormal children; (3) social hygiene as applied to children, and (4) war orphans. The question of establishing an international bureau for the protection of children will also be considered. The first agitation in favor of such a bureau was begun in 1913, but the course of events since that date has prevented the carrying out of the idea. An international bureau would serve as a clearing house for those who, in the different countries, are interested in the child welfare movement. It would facilitate the study of questions bearing on child welfare, and would favor the progress of legislation and the adoption of international agreements. The efforts made by the Belgian people to protect its children and to better the human race have placed this country in the front rank of progressive nations. This fact makes it especially fitting that Belgium should be the country to organize an international bureau and to take the initiative in summoning a congress analogous to that of 1913, of which Brussels would be the headquarters, and at which the many important questions bearing on the hygiene of childhood and the moral training of youth could be discussed. A royal decree has been issued providing for the meeting of a second international child welfare congress under the protection of their majesties the king and queen of the Belgians. The Belgian government has requested foreign governments to send official delegates. The congress will convene at Brussels, July 18, 1921, for a four day session.

A Prize Subject

A prize has been offered by the Académie royale de médecine de Belgique for the best article on "New Researches on the Influence of Endocrine Glands on the Phenomena of Immunity." The amount of the prize is 2,000 francs, and the date set for closing the competition is July 15, 1922.

BUENOS AIRES

(From Our Regular Correspondent)

Dec. 17, 1920.

International Sanitary Congress at Montevideo

The sixth international sanitary conference of the American republics is being held at Montevideo. The delegates from each country are expected to present a report on the laws adopted since the fifth conference was held, and on the extent to which they have put into force the measures previously recommended. They must also report on the prevalence of communicable diseases. Special attention will be devoted to the campaign against tropical diseases. At the last moment, Profs. Joaquin Llambias and Gregorio Martinez were appointed delegates from Argentina. It seems strange that no sanitarian should have been designated to represent this country, and that these appointments should have been made at the very last hour.

Typhus Fever

The campaign conducted in the province of Salta to eradicate the limited foci of typhus fever, which existed there, seems to have been successful. As the disease is generally imported from Bolivia, the government has ordered the establishment of a quarantine station at Humahuaca.

University Problems

The peculiar arrangement, which allows students to have a voice in the determination of the directing boards of universities, has created a state of absolute lack of discipline in all Argentine universities. The one so far comparatively exempt from this evil is the University of Buenos Aires, although even here intrigue and political pull assert their unhappy influence now and then. As an example of the students' demands, there may be mentioned the case of the school of medicine of El Rosario, where the students held a meeting and voted to have four examinations before beginning or completing courses. They informed the acting president that they would like to see him resign. They also decided not to pay their fees for the last two terms still pending, declaring their payments complete with the amount they had already paid. These resolutions were transmitted to the professors, the president of the school and the secretary of education. The best part of it is that the president called the students to his office and informed them that, aside from his resignation, all their demands were granted.

Public Assistance

Patients from all over the country gravitate to Buenos Aires, imposing an enormous burden on this city. It is estimated that 40 per cent. of hospital patients do not belong to

the capital. The resources of the public assistance authorities are entirely insufficient, and it has been suggested over and again that they should receive an appropriation from the national government. However, of late the idea has been gaining ground that the final solution of the problem would be the adoption of health insurance for workers. In order to appreciate the amount of emergency service rendered by the city authorities, the fact may be cited that one of the various district sections has every month at least 2,000 first aid calls. In order to perform this work more efficiently, an appropriation of 50,000 pesos (about $53,000) has been devoted to replacing and increasing the ambulance facilities. Public assistance authorities have increased their efforts in the antirat campaign. In three months, 11,000 dwellings have been inspected and more than 35,000 rats and mice have been killed.

PRAGUE

(From Our Regular Correspondent)

Jan. 3, 1921.

Contagious Disease Situation

The contagious disease situation in Czechoslovakia is not entirely satisfactory, though not alarming. Typhus fever and smallpox are the two dangers. The incidence of typhus fever had its peak last year in June when 122 cases in Slovakia and seventy-eight in Ruthenia were reported. The last printed report for the month of October gives twenty-two cases in Slovakia and twenty-one cases in Ruthenia. Smallpox was prevalent, especially in Bohemia, in May and June, 1919, among the German population, few of whom were vaccinated, many being opponents of compulsory vaccination in Germany who had emigrated to Bohemia chiefly for this reason. July 15, 1919, a compulsory vaccination law was passed by the parliament, and a marked decline in smallpox followed. For the month of October, 1920, no cases were reported from Bohemia and Moravia; there were eleven cases from Slovakia, and four from Ruthenia. Many of the typhus and smallpox cases were imported from Poland and Roumania. Because of the permanent danger that contagious diseases might be imported into the republic, the ministry of public health is endeavoring to take all necessary steps to enable the ministry to cope with the foci before the disease spreads.

Transportable Hospital

In cooperation with the Czechoslovak Red Cross, a transportable hospital was constructed by the International Health Board. It consists of three barracks; one contains forty beds in three rooms, another is used for administration and living quarters for the personnel, and the third is used as a storehouse. The whole hospital can be shipped in boxes weighing not more than 100 kg. (220 pounds). In addition, a unit of four automobile cars was supplied which will be sent to places where the first case of the disease is reported. One car serves as a complete laboratory, the next as an ambulance, the third as a delousing station, and the fourth as a steam disinfector. One physician, four nurses and four chauffeurs, who have the necessary training for disinfecting, form the staff.

Nationalization of Health Service

In April, 1920, a law was passed by parliament by which all the local health officers will be nationalized. Because this law goes into effect after the political reorganization of the country takes place, and as this seems to be far distant because of financial difficulties, a new law is being prepared by which the health service will be nationalized. It is an absolute necessity for Slovakia, where the people are ignorant and where it would take a long time before the health officers could be supported from local funds. Of course, all the investments for sanitary improvements must be paid locally.

Sickness Insurance

An innovation of the sickness insurance law was accepted by parliament by which all workmen whose yearly income amounts to 20,000 crowns or less will be included. The patient will be free to choose his physician from a certain group. In addition to the medical benefit, the insured person will get a support amounting to one third of his salary. This will be paid for a maximum period of one year. The insurance includes maternity benefit in the same amount for six weeks before and six weeks after childbirth. Special bonuses will be given to mothers who nurse their babies. The insurance is compulsory not only for the workmen with the income stated above, but also for the members of their family.

BERLIN

(From Our Regular Correspondent)

Dec. 24, 1920.

The Relation of the Total Number of Males and Females Born Since the War

The view is widespread that during a war and especially during the years following a war a great many more boys than girls are born. That the total number of boys born exceeds the total number of girls even under normal conditions is shown by the fact that in a series of 61 million births in Europe the relation of the sexes was 106.3 boys to 100 girls. A similar result has been reached in other states in which like statistics are recorded. In this connection it is peculiarly interesting to note that also in animals constant sexual differences in the birth rate have been noted. In cattle, to 100 females there are 107.3 males; in pigs, 111.8 males; in pigeons, 115; in butterflies, 105 males. As to the relative birth rate during the war, statisticians have been endeavoring to determine just what actually did happen. Geheimrat Bela, formerly division superintendent in the Prussian bureau of statistics, on the basis of information furnished by the various statistical bureaus of Germany has reached the conclusion that there is no ground for the prevailing belief that in the births during the period from 1914 to 1917 there was an unusual preponderance of males over females. The relative proportion of the two sexes has not changed. In Prussia, during the years 1914-1917, the relation of males to females born was between 106 and 107 to 100.

Teneriffe Chimpanzees

At the suggestion of the Berlin neurologist, Professor Rothmann, who, as already stated in a previous letter, committed suicide during the war, the Prussian Academy of Science, using the funds of a foundation, several years ago established a station for the study of anthropoid apes on the island of Teneriffe, the purpose being to gain, by means of experimental investigations, a closer insight into the psyche of these animals. The observations were made on chimpanzees brought from Kamerun, West Africa, and allowed to have their full freedom. After the close of the war, on account of lack of funds, the station could no longer be kept up. The apes were therefore transported to Berlin and placed in the Zoological Garden. The shipment comprised five large, full-grown females. On the occasion of the presentation of the animals before a group of scientists, Professor Heck, the director of the Zoological Garden, emphasized the point that such apes could not be expected to give evidence of any great mental accomplishments, and especially could not be expected to perform any complicated mathematical stunts (the professor doubtless having in mind the "calculating horses," which created such a sensation in Germany before the war). He stated further that, when we recall that the brain of an old gorilla whose body weight is almost equal to that of an athlete is no larger than that of a new-

born child and that the fully developed brain of an ape fills a space of only 500 c.c. as compared with the 1,500 c.c. occupied by the brain of man, we can draw our conclusions as to mental accomplishments. Histologic investigations have also shown that the cells of the cerebral ganglions in the chimpanzee are only one sixth as numerous as in the human brain. Nevertheless, during the course of the observations made on the island of Teneriffe these animals gave remarkable signs of intelligence. One morning one of the females, finding that it was cold outside, went to the cabin and secured a wrap, which she threw over her shoulders with a certain coquetry and then resumed her promenade. Another ape turned the tap water on when he was thirsty. It was interesting to note that the chimpanzees were often able to solve their problems unaided, finding themselves the ways and means of accomplishing their purposes. At first, quite animal-like, there was always a planless groping about in hopes that chance would throw something in their way; but then, if that plan failed, a period of quiet meditation followed, and finally they would suddenly get a happy idea that would solve the problem. Professor Heck also stated that apes in their native woods build a special type of lair or den, and that in the freedom of their wilds, where there are good-sized colonies, they have small huts with sufficient capacity for three or four inmates. In these huts doubtless live males and females, together with their children. The anthropoid apes are the only mammals, aside from man, in which this monogamous trait has been noted. When, after the long sea voyage, the apes were released at the Zoological Garden from their cages they uttered a joyful cry and gave evidence of their great joy by embracing each other.

Marriages

WILLIAM DONALD ROLPH, Richmond, Calif., to Miss Harriet Chapman of Chicago, at San Diego, Calif., December 29.

WILLIAM PETER MULL, Lieutenant, M. C., U. S. Navy, to Miss Marion Ellis of Chicago, December 29.

BUDD H. HIGDON, Sunflower, Miss., to Miss Mabel Irby Redditt of McCarley, Miss., December 30.

CHARLES SUMNER ROBBINS, Washington, D. C., to Miss Louise Pieffer of Baltimore, January 8.

WALTER LEE JACKSON, Ranger, Texas, to Miss Exa M. Lewis of Teague, Texas, October 20.

LOUIS ELSWORTH LANGLEY to Mrs. Abbie J. Buhse, both of Williamsport, Pa., January 2.

LOUIS LEHRFELD, Philadelphia, to Miss Adele Coblentz of San Francisco, December 17.

MAXWELL B. KREMENS, Philadelphia, to Miss Ethel Samuels of New York, December 29.

HERBERT LEONARD LANGER, Brooklyn, to Miss Helen Stein of New York, December 29.

MURRAY BURNES GORDON, Brooklyn, to Miss Harriet Engel of New York, December 5.

RAWLEY HARRISON FULLER to Miss Corrie Mae Allen, both of Clover, Va., February 1.

DANIEL HAROLD LEVINTHAL to Miss Gertrude M. Coski, both of Chicago, December 19.

PERCY LENNARD QUERENS, New Orleans, to Miss Gillie Rizes of St. Louis, January 11.

ELMER ELLSWORTH STONE to Mrs. B. Elise Joy, both of San Francisco, December 20.

JOSEPH HARRISON WYATT to Miss Eugenie Laubach, both of Philadelphia, recently.

PHILIP B. BREGMAN, Brooklyn, to Miss Anna Daniels of New York, January 9.

HENRY ARTHUR GRIFFIN to Mrs. Ryle Strange, both of New York, November 11.

JOHN F. HOGAN to Miss Mary L. Kelly, both of Baltimore, January 19.

Deaths

Charles F. Dutton, Cleveland; Bellevue Hospital Medical College, New York, 1864; aged 89; assistant surgeon of Ohio Volunteers during the Civil War; at one time president of the Cuyahoga County Medical Society; formerly professor of medicine and clinical medicine at the Cleveland Medical College; died, January 9.

Anslem C. Robinson, St. Louis; Missouri Medical College, St. Louis, 1874; aged 69; a member of the Missouri State Medical Association; for many years police surgeon and city physician, and for four years a member of the board of health of St. Louis; died, January 12, from heart disease.

Samuel Spahr Laws, Asheville, N. C.; Bellevue Hospital Medical College, New York, 1875; aged 96; at one time professor of physiologic science and president of Westminster College, Fulton, Mo., and president of the University of Missouri; also a clergyman; died, January 9.

Henry Horace Grant ● Louisville, Ky.; Jefferson Medical College, Philadelphia, 1878; aged 67; professor of surgery in the University of Louisville; at one time president of the Mississippi Valley Medical Association; died, January 24, from cerebral hemorrhage.

Amasa S. Condon, Ogden, Utah; Marion-Sims College of Medicine, St. Louis, 1892; aged 71; a veteran of the Civil and Spanish-American wars; surgeon of the Union Pacific Railway; for two terms a member of the state legislature; died, January 17.

William Buchanan Arbery, Jacksonville, Ala.; Vanderbilt University, Nashville, Tenn., 1882; aged 64; a member of the Medical Association of the State of Alabama; at one time president of the Calhoun County Medical Society; died, January 1.

John Paul Ashworth, Chicago; Jenner Medical College, Chicago, 1906; University of Illinois, Chicago, 1914; aged 41; major, M. C., U. S. Army, and discharged, Aug. 1, 1919; died, January 24, from pneumonia.

Samuel M. Royer, Martinsburg, Pa.; Cincinnati College of Medicine and Surgery, 1869; aged 82; a veteran of the Civil War; for fifty years a practitioner of Martinsburg; died, January 24, from septic cystitis.

Joseph W. Bettingen ● St. Paul; College of Physicians and Surgeons in the City of New York, 1888; aged 55; a member of the Minnesota Academy of Ophthalmology and Oto-Laryngology; died, January 14.

Jacob T. Ambrose, Ligonier, Pa.; Long Island College Hospital, Brooklyn, 1870; aged 83; a member of the Medical Society of the State of Pennsylvania; a veteran of the Civil War; died, January 15.

Henry Beemokes Hess ● Paterson, N. J.; University and Bellevue Hospital Medical College, 1916; aged 36; lieutenant, M. C., U. S. Army, and discharged, Dec. 20, 1918; died, January 12, from pneumonia.

John B. Hollingsworth, Pine Ridge, N. C.; Jefferson Medical College, Philadelphia, 1880; aged 62; died, January 3, from the effects of a gunshot wound of the head, self-inflicted, it is believed.

Charles F. Thomas, Caribou, Maine; Long Island College Hospital, Brooklyn, 1873; a member of the Maine Medical Association; died at the South Side Hospital, Miami, Fla., December 28.

D. J. Ballard, St. Paul, Ind.; Cincinnati College of Medicine and Surgery, 1876; aged 79; a veteran of the Civil War; also a druggist; died, January 9, from organic heart disease.

Edward Wilberforce Kellogg, Avon, Conn.; Homeopathic Medical College of the State of New York, New York, 1867; aged 80; a veteran of the Civil War; died, January 15.

John Franklin Adams, Bagdad, Ky.; Louisville (Ky.) Medical College, 1884; aged 62; a member of the Kentucky State Medical Association; died, January 1, from anemia.

Walter Scott Patterson, Butler, Pa.; Jefferson Medical College, Philadelphia, 1901; aged 42; at one time coroner of Butler County; died, January 18, from pneumonia.

Thomas Helme, McKownville, N. Y.; Albany (N. Y.) Medical College, 1890; aged 53; a member of the Medical Society of the State of New York; died, January 4.

James J. O'Dea, Stapleton, Staten Island, N. Y.; McGill University, Montreal, Que., 1859; aged 84; died, January 12.

● Indicates "Fellow" of the American Medical Association.

Henry Wilson Niswonger, Fort Wayne, Ind.; Fort Wayne (Ind.) College of Medicine, 1889; aged 73; a veteran of the Civil War; also a druggist; died, January 7.

William L. Hedges, Warrensburg, Mo.; Homeopathic Medical College of Missouri, St. Louis, 1869; aged 86; a veteran of the Civil War; died in December.

George P. Ramsey, Crawfordsville, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1900; aged 44; died, January 8, from tuberculosis.

Eva Helen Knight ● New York; Woman's Medical College of the New York Infirmary for Women and Children, 1891; aged 65; died, January 17.

Charles Everett Graham, Hull, Que.; McGill University, Montreal, 1865; aged 76; at one time coroner and mayor of Ottawa; died, January 13.

Emil T. Cherry, Altoona, Pa.; Medical College of Indiana, Indianapolis, 1884; aged 57; died, January 9, following an operation for gallstones.

George Memory Chapman, Morven, N. C.; Chattanooga (Tenn.) Medical College, 1897; aged 48; died at the Charlotte Sanatorium, January 9.

John Wilson Sparks, Arkansas City, Kan.; Rush Medical College, 1871; aged 79; for two terms mayor of Arkansas City; died, January 3.

John DeLoss Rouse, St. Louisville, Ohio; Medical College of Ohio, Cincinnati, 1875; aged 68; died, January 12, from cerebral hemorrhage.

Frederick Leix ● Los Angeles; California Eclectic Medical College, Los Angeles, 1906; aged 56; died, January 14, from disease of the liver.

Lloyd Ackley, Canaseraga, N. Y.; University of Buffalo, N. Y., 1899; was fatally burned, January 14, in a fire which destroyed his home.

William Willis Griffith, Bainbridge, Ga.; Atlanta (Ga.) Medical College, 1915; aged 32; died, January 11, from cerebral meningitis.

William L. DeLap, Gloucester City, N. J.; Hahnemann Medical College and Hospital, Philadelphia, 1886; aged 65; died, January 5.

George Luther Parmele, Glastonbury, Conn.; Long Island College Hospital, Brooklyn, 1869; aged 72; also a dentist; died, January 2.

John C. Stout, Oakland, Calif.; American Medical College, St. Louis, 1878; aged 74; died, January 7, from cerebral hemorrhage.

Mark Blumenthal, New York; College of Physicians and Surgeons in the City of New York, 1852; aged 89; died, January 12.

Orange Anderson Johnston, Picayune, Miss.; Memphis (Tenn.) Hospital Medical College, 1900; aged 45; died, January 20.

George S. Dobbins, Mission, Texas; Homeopathic Medical College, Chicago, 1901; aged 66; died, January 16, from heart disease.

Edward William Brickley, York, Pa.; Hahnemann Medical College and Hospital, Philadelphia, 1883; aged 59; died, January 13.

George Howell Cox, Joplin, Mo.; University of Pennsylvania, 1864; a veteran of the Civil War; died, December 20.

William Elliott ● Escanaba, Mich.; University of Toronto, Ont., 1897; aged 53; died, January 18, from heart disease.

Ignatius S. Few, Texarkana, Texas (license, Texas, years of practice); aged 81; died at Monroe, La., January 11.

Daniel Joseph Nolan, Burlington, Vt.; University of Vermont, Burlington, 1904; aged 42; died, December 13.

Julius Manson Greer, Chattanooga, Tenn.; Atlanta (Ga.) Medical College, 1880; aged 69; died, January 16.

Edward Floyd Brown, Natchez, Miss.; Tulane University, New Orleans, 1896; aged 52; died, November 22.

Frank E. Thomas, Lansing, Mich.; Detroit College of Medicine and Surgery, 1894; aged 53; died recently.

Ira Leslie Edmunds, Clearwater, Minn.; Rush Medical College, 1882; aged 61; died, January 10.

William J. O'Sullivan, New York; Yale University, New Haven, 1889; aged 62; died, January 20.

Thomas Albert Cootey, Rutland, Vt.; University of Vermont, Burlington, 1880; died, January 6.

Leo Schnepp, New York; University of Budapest, Hungary, 1874; aged 71; died, January 11.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

GLOVER'S CANCER SERUM

The Toronto Academy of Medicine Reports Unfavorably on the Alleged Cure

The method of exploitation of the alleged cancer serum being put out by Dr. T. J. Glover of Toronto, Canada, was briefly discussed in this department of THE JOURNAL for January 1. At that time it was pointed out that the medical profession of the United States was being widely circularized by Dr. Glover and that, while the letters purported to come from Toronto, they were, in fact, mailed from New York City. Since this article appeared the circularization seems to have continued undiminished and physicians in various parts of the United States have sent in the Glover advertising material. Oddly enough, the matter now sent out, while identical in every respect with that dealt with in the previous article, bears a different return address on the back of the envelope. The envelopes are the same but the legend "T. J. Glover Research Laboratory, 538 Jarvis St., Toronto, Canada," has been crudely crossed out and there has been substituted by means of a rubber stamp the legend "MRS. STEWART, 309 W. 54th St., New York." Still later letters have been modified to the extent that the letters "RS" of "MRS." have been cut out of the stamp and it now reads "M . STEWART."

There has now come to hand a report just published by a special committee appointed by the council of the Academy of Medicine, Toronto, to investigate the Glover Serum. The report of this committee may be summed up by one of its closing paragraphs, which reads:

> "The data which your committee has been able to obtain have not convinced it that the results of treatment obtained by the use of Dr. Glover's serum are better than those obtained by similar methods introduced by others, and which have ultimately disappointed the hopes entertained of them."

The committee's report deals with the claims that Dr. Glover has made for his serum both experimental and clinical. It seems that Dr. Glover has claimed that, experimentally, he had (1) cultured cancer cells and from these cells had isolated and cultured an organism which he declared was confined to, and present in, every type of cancer; (2) produced cancer in a number of animals by inoculation with these cells and organisms; (3) obtained a serum—from a horse that had been injected with cultures of these cells and organisms—which, when injected into experimental animals rendered them immune to inoculation, and (4) produced improvement or cure in cases of human cancer by the injection of his serum. The committee reported that it was unable to obtain any evidence to substantiate Dr. Glover's claims on the experimental aspect of the question as Dr. Glover had refused to permit representatives of the committee to visit his laboratory; had refused the request of the committee to be allowed to examine his cultures and experimental material; had not acceded to the request of the committee that he demonstrate his ability to culture cancer cells and organisms and to produce cancer by inoculation or to immunize animals against it.

The committee attempted also to collect information which would enable it to pass on the clinical claims made by Dr. Glover, first, as to whether he has succeeded in producing cures, either regularly or occasionally, in cases definitely established as cancer and, second, to enable the committee to decide whether his serum in cases definitely established as cancer produces improvement beyond that which occasionally occurs spontaneously or under palliative measures. On both these points the committee reported that it found no evidence

to warrant the hope that a specific cure for cancer has been discovered by Dr. Glover or that the serum had produced a cure in any case definitely established as cancer.

It should be understood that the committee's investigations and findings were completed before the present advertising campaign of the Glover serum was initiated.

SALICON

"Salicon" is marketed by the K. A. Hughes Company, Boston, as "an improved aspirin." In a circular sent out to the public a little over a year ago the following claims were made for it:

"We rendered aspirin absolutely harmless and yet retained all its virtues as a medicine."

"It positively will not depress the heart nor upset the stomach no matter how large amounts of it are taken."

". . . the Massachusetts state medical authorities . . . adopted its use at all the state camps for fighting the Spanish influenza. . . ."

The first two statements quoted above are obviously false. The third statement might have been true although it seemed unlikely. A letter was, therefore, written to the Department of Public Health of the Commonwealth of Massachusetts and the claim of the K. A. Hughes Company relative to the adoption of Salicon in all the state camps by the "state medical authorities" was brought to their attention. The reply of the department on this point was emphatic:

"The State Department of Health of Massachusetts did not endorse the use of Salicon for any purpose."

Some Salicon was purchased on the open market and submitted to the A. M. A. Chemical Laboratory for analysis. Here is the chemists' report.

"One original bottle of 'Salicon' (K. A. Hughes Company, Boston) was submitted by the Propaganda department of THE JOURNAL to the Association's Chemical Laboratory for examination. The bottle contained 100 white tablets having an average weight of 0.407 gram (6.3 grains) each. The amount of ash was 20.9 per cent. Qualitative tests indicated the presence of magnesium, carbonate, starch, acetylsalicylic acid and a trace of calcium; a very small amount of a petrolatum-like substance was present. Alkaloids and drugs used for a laxative effect were not found. The amount of acetylsalicylic acid extracted by chloroform was 50.7 per cent. The amount of magnesium present as magnesium oxid was 14.3 per cent. The amount of magnesium oxid derived from magnesium carbonate U. S. P. is variable but calculating on the lowest limit, 14.3 per cent. of magnesium oxid is equivalent to at least 35.5 per cent. of magnesium carbonate. This figure agreed closely with that obtained from the U. S. P. method of assay. The acetylsalicylic acid was not combined with the magnesium. From the above, it may be stated that each tablet consisted essentially of a mixture of 3.2 grains of acetylsalicylic acid (aspirin), 2.2 grains of magnesium carbonate and some starch. Although labeled 5 grains, each tablet did not contain 5 grains of the most active ingredient, acetylsalicylic acid."

The same old story. An ordinary mixture of well-known drugs put on the market as a new discovery and foisted on the public under false and misleading claims.

Buffer Action of the Blood.—A solution containing buffer substance has the property of taking up relatively large quantities of acid without producing much change in the reaction of the solution. Blood has this power to a marked degree. If 1 c.c. hydrochloric acid be added to 100 c.c. of distilled water and to 100 c.c. of blood, respectively, the acidity of the water will change much more than that of the blood. Buffer substances usually belong to the class of weak acids, of which the phosphates, bicarbonates and organic acids are good representatives. In the blood we have bicarbonates, phosphates, and amphoteric protein, all of which may possibly serve as buffer substances. There has been some controversy as to which substances actually are acting as buffers, but it is now generally accepted that, within the limits of reaction usually found in the body, the bicarbonates and the protein together are practically entirely responsible for the buffering action. The buffer action of the blood takes place both in the plasma and in the corpuscles.—*Med. Science* 3:334 (January) 1921.

Correspondence

"PROPHYLAXIS OF SYPHILIS WITH ARSPHENAMIN"

To the Editor:—In THE JOURNAL, Dec. 25, 1920, p. 1768, is an article by Drs. Leo L. Michel and Herman Goodman entitled "Prophylaxis of Syphilis with Arsphenamin," with which I am not entirely in accord. Were Drs. Michel and Goodman applying in their cases a prophylactic or a curative treatment? They state that their patients had in all probability contracted the disease through sexual intercourse as, according to the experiments made in the Rockefeller Institute, syphilis exists in the rabbit twenty-four hours after inoculation even when the primary lesion is surgically removed.

According to this, Drs. Michel and Goodman were only preventing the appearance of symptoms by curing the disease in its first incubation stage (in which no clinical symptoms can be detected) by injecting enough arsphenamin to kill the spirochetes that had already reached the blood. When we apply prophylactic treatment by Metchnikoff's method we try to destroy the spirochetes in situ, before they enter the body. When we use typhoid or smallpox vaccine we are making the ground unsuitable for Eberth's bacillus or the germ of variola to live in. In all these cases we are employing prophylaxis, but I hardly think we could call prophylactic a procedure by which we stop the progress of a disease already affecting the system.

Syphilis begins at the moment the spirochetes enter the lymphatic and the blood vessels, long before the appearance of the primary lesion. The cases reported in this article were therefore syphilis, and Drs. Michel and Goodman, were with their treatment accomplishing the *therapia sterilisans magna* of Ehrlich in a stage of the disease when complete success was to be expected.

I had two cases in my private practice similar to those reported. One was that of a man with a syphilitic chancre who, ignorant of the danger, had intercourse with his wife. She presented no symptoms of syphilis at the time, but I treated her intensively, and so far after two years, the Wassermann test remains negative and she has had no signs of the disease. The other case was that of a young man with mucous patches in his mouth and lips who confessed to having kissed his fiancée repeatedly. She showed no clinical symptoms of syphilis and the Wassermann test was negative, but treatment was instituted, and six months afterward no signs of the disease have appeared and the Wassermann test is still negative.

I never considered these cases very important as my idea was that I was using the abortive treatment of syphilis in that period of the disease during which the patients can be easily sterilized. Maybe others think in the same manner, and that probably explains why up to this time so little can be found on this subject in the medical literature.

V. PARDO-CASTELLÓ, M.D., Havana, Cuba.

[The foregoing letter was referred to DRS. LEO L. MICHEL and HERMAN GOODMAN, New York, who reply:

The prophylaxis of syphilis is not comparable with the prophylaxis of either typhoid fever or variola, in that as yet we have neither a vaccine nor a serum. But if local mercurial applications, as suggested by Metchnikoff, are to be considered and labeled "prophylactic treatment," and Dr. Pardo-Castelló uses the phrase, then it is proper to consider the intravenous injection of arsphenamin during the primary incubation phase of syphilis as prophylactic and not curative. Ultimately, the matter boils itself down to a matter of degree.

When the spirochetes of syphilis have entered the lymphatics and blood vessels of the new host only to the degree that external mercurial application may still affect all of them lethally, we have successful prophylactic treatment according to Metchnikoff. When the entry is deemed beyond that degree, we have the prophylactic treatment by arsphenamin. If either of the procedures is to be considered *therapia sterilisans magna*, then both must be so considered, provided the clinical course of the disease has not made itself evident.

Certainly time and usage have accepted the term "prophylaxis" in the sense of either local mercurial or systemic arsphenamin application as the phrase was used in our article. To confuse Ehrlich's conception of the power and value of his synthetic preparations in the treatment of clinical syphilis would be a great injustice, and one very likely to lead to much confusion and ill advised quasitherapeutic procedures. Since our contribution went to press, we have added to the bibliography the short chapter entitled "Use of Arsphenamin in Prophylaxis," in a paper by Dr. John H. Stokes on "The Applications and Limitations of Arsphenamin in Therapeutics," *Archives of Dermatology and Syphilology* **2**:303 (Sept.), 1920.]

PECULIAR PRACTITIONERS AND MEDICAL FREEDOM

To the Editor:—Recently I examined a boy, aged 17, lying in bed, very weak, extremely emaciated, totally blind, barely able to swallow. The ophthalmoscope revealed double optic atrophy.

The history of the case is, briefly: failing vision over nine months, terminating in blindness last August; for several months in the spring and summer of 1920, very severe headaches and frequent attacks of vomiting, often when there was no food in the stomach, and repeated convulsive seizures limited to the right leg without loss of consciousness. It was easy to make a diagnosis of brain tumor; but the condition of the patient was such that surgical interference was out of the question.

This diagnosis, which seemed perfectly clear, might easily have been made months ago. The condition of the patient for many months was certainly grave and alarming, and might have suggested to any one that it needed thorough investigation. During all these months, while the vision was fading and blindness coming on, what did this boy receive? Treatment by an osteopath and then a chiropractor, and then treatment by another peculiar practitioner and still another chiropractor, and so on, but never an ophthalmoscopic examination. Yet with cases like this before us there are those who will still make sophisticated arguments for "medical freedom."

THEODORE DILLER, M.D., Pittsburgh.

"ON SELECTION OF MEDICAL READING"

To the Editor:—The editorial comment "On Selection of Medical Reading" (THE JOURNAL, Jan. 22, 1921, p. 250) discusses a subject which, it seems to me, merits considerable thought, and perhaps more especially as it applies to the undergraduate medical student and the medical journal. The student generally has carefully selected for him a sufficient number of standard textbooks, but this does not apply to journals. Senior, and even junior students, are likely to read journals. It is hardly to be expected that they should be able to read them critically and with proper discrimination. So much unfinished matter finds space in even our better journals that it is too common to see what today, especially to the uncritical mind of a young student, may seem ultimate truth be wholly contradicted in a few weeks or months by evidence that appears to be just as authentic and just as worthy of credence. It seems fair to ask: Is it so necessary that young men or women just graduating from a medical school should be informed of all the latest controversies in medicine, and that they should be exposed, in the process of acquiring this information, not only to the bewilderment of controversial matter, but also to the infection with a not inconsiderable amount of falsehood? When new matter appears in journals which to the medical faculty or to the head of a department seems so true and final as to make it desirable that the undergraduate be made aware of it, might not the school supply the students with reprints of such selected articles? And would not such articles, if carefully selected, be so few as not to be too burdensome to the student? Why wouldn't it be wise, in general, to let medical fruit mellow before offering it to the undergraduate palate?

MAXIMILIAN SCHULMAN, M.D., New York.

"THE FLY IN COURT"

To the Editor:—Apropos of the pronouncement of the Supreme Court of Maine against the house fly, described in THE JOURNAL, Dec. 11, 1920, readers may be interested in an abstract from the November, 1920, number of a little French journal, "La Chronique médicale" which shows that the fly does not enjoy the unique distinction among the animals of having been haled before before a court of law:

> Formerly the rats, always considered as a public danger, were treated in a manner less sanguinary: they were attached only with blows of court processes, and when they were called before the tribunals they found advocates to plead their cause and justify their misdeeds. It was by serving in defense of the rats of the diocese of Autun that the famous jurisconsul de Chassanée established his reputation. In order to gain time and wait until the animosity against the accused beasts should subside, he claimed that, the rats being scattered in a great number of villages, a simple notice had not been sufficient to warn all of them, and asked that a new notice be given them, with a separate publication in each parish. At the expiration of this long delay, the rats, to be sure, understood nothing. Chassanée excused this "défaut" by alleging the length of the road, the difficulties of travel, the dangers run by the rats, for the cats, their mortal enemies lay in wait for them on all the roads. After many delays, he finally had to plead the case. He then appealed to considerations of sentiment, of pity, of policy, of heroism even. Was it not the rats who, eaten in the besieged cities, conserved to the garrisons their courage and vigor?

We do not know what sentence was rendered by the official of Autun. What one knows, however, is that the rats were saved from excommunication. Autre temps, autre mœurs!

M. Y. MARSHALL, M.D., Henderson, Ky.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

HYPERTHYROIDISM AND BASAL METABOLISM

To the Editor:—I shall appreciate whatever information you can give me concerning the following questions:

1. Do thyroxin and thyroid extract invariably raise the basal metabolism in normal individuals?
2. Do all definite cases of hyperthyroidism show an abnormal blood sugar curve after the administration of 100 gm. of glucose?
3. In hyperthyroidism may one expect the hypersensitiveness to epinephrin and the abnormal glucose tolerance (blood sugar curve) to return to normal as the clinical condition improves?

If published, please omit name. E. M. E., North Carolina.

ANSWER.—1. Thyroid extract administered in the usual way, by mouth, does not invariably increase the basal metabolic rate. Failures to produce this or other expected results from the administration of thyroid extract by the alimentary route in man and animals are observed not infrequently and have sometimes been attributed to the use of inactive preparations. Thus, by way of illustration, P. T. Herring (*Endocrinology* **4**:577, 1920) in a recent criticism of certain experiments conducted by Kuriyama, avers that "Kuriyama's experiments

were unsatisfactory in that he employed desiccated thyroid of unknown activity in doses which would be toxic if fully active." E. C. Kendall has stated that thyroxin itself may also fail to produce its characteristic effects when administered by the mouth, and from this it would appear that inactivity of the preparation need not be held responsible for all such failures. Thyroxin itself, when administered by vein, is reported to produce the characteristic increase of the basal rate with high consistency.

2. It is accepted as a fact that glycosuria may be produced by the administration of thyroid. Glycosuria is also occasionally observed in cases of hyperthyroidism. Such cases are also found in many instances to show an abnormal elevation of the blood sugar percentage or even pronounced glycosuria after the administration of glucose by mouth; but such phenomena are not peculiar to cases of hyperthyroidism, nor can it be said at the present time from any existing data that all cases of definite hyperthyroidism show these changes. The consensus among those who have worked in this field is that the blood sugar curves in cases of hyperthyroidism are interesting but of no definite diagnostic or prognostic importance. Compare in this connection the papers by Means and Aub (*Arch. Int. Med.* **24**:645 [Dec.] 1919) and Janney and Henderson (*ibid.* **26**:297 [Sept.] 1920).

3. The entire question as to the relationships which may be expected between hypersensitiveness to epinephrin and the symptoms of hyperthyroidism is involved in the question of what we mean by the term hyperthyroidism. It is a term that has been and still is used differently by different writers. Some would classify cases as cases of hyperthyroidism on the basis of certain signs and symptoms such as the character of the thyroid, tachycardia, tremor or sweating, with or without any observed increase of the basal metabolism; others would not sanction the employment of *hyperthyroidism* to designate cases which, after sufficient study by exact methods in the hands of well-trained observers, show no elevation of the basal metabolic rate. If we speak of hyperthyroidism only in cases that show evidences of an increased thyroid function, and accept the view that no evidence of increased thyroid function is complete without an increased basal rate, as held by Plummer, Kendall, et al. of the Mayo Clinic, then it is necessary to exclude from the field of hyperthyroidism all cases which fail to show this phenomenon. The tendency in the leading clinics of the country is to adopt the latter usage as the only one based on a concrete experimental foundation. Hypersensitiveness to the effects of subcutaneous or intramuscular injection of epinephrin as evinced by an unusual elevation of the pulse rate and blood pressure, together with other symptoms as described by Goetsch, may be present in cases that show no elevation of the basal metabolic rate prior to the injection of the drug. This appears to have been shown by Goetsch himself, who includes in his series of hypersensitive cases some in which the basal rate was not elevated, and by Peabody (*M. Clinics N. America* **2**:507 [Sept.] 1918) and his associates, Wearn, Tompkins and Sturgis (*Arch. Int. Med.* **24**:269 [Sept.] 1919), who found increased sensitiveness to epinephrin in a considerable percentage of cases of "irritable heart of soldiers" (effort syndrome, neurocirculatory asthenia), although determinations of the metabolic rates in the same cases lent no support to the theory that hyperthyroidism was an underlying feature. Some writers have failed to observe hypersensitiveness to epinephrin even in cases which they considered to be cases of hyperthyroidism. The work of Peabody and his associates shows, further, that the injection of epinephrin caused a definite increase of the basal metabolism both in individuals who were and those who were not hypersensitive to epinephrin; but no parallelism was observed between the increases in basal rate and the degree of hypersensitiveness in the Goetsch sense. Accordingly, it cannot be said at present that hypersensitiveness to epinephrin rises and falls with the rate of metabolism. It depends rather on changes in the sympathetic autonomic nervous system which may accompany hyperthyroidism but which may also occur in other conditions.

"INSANITARY" OR "UNSANITARY"?

To the Editor:—I have been using for years the word "unsanitary" to designate unclean conditions, especially in reference to health. I have been told that "insanitary" is the word to use. To the question why, no reason is given. What does THE JOURNAL think about it? Please omit my name.

J. M., Connecticut.

ANSWER.—"Sanitary" is derived from the Latin; hence the proper prefix is "in." Webster's Dictionary and Dorland's, Stedman's, Lippincott's and Gould's medical dictionaries each gives "insanitary" only; the Standard and Century dictionaries give both forms.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 1. Sec., Dr. Harry C. Vighne, Juneau.
CALIFORNIA: Los Angeles, Feb. 14-17. Sec., Dr. Charles B. Pinkham, 727 Butler Bldg., San Francisco.
CONNECTICUT: Hartford and New Haven, March 8-9. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, New Haven. Sec., Eclectic Bd., Dr. James E. Hair, 730 State St., Bridgeport.
KANSAS: Topeka, Feb. 8. Sec., Dr. Henry A. Dykes, Lebanon.
MAINE: Portland, March 8-9. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.
MASSACHUSETTS: Boston, March 8-10, Sec., Dr. Walter P. Bowers, Rm. 144, State House, Boston.
NATIONAL BOARD OF MEDICAL EXAMINERS, St. Paul, Minneapolis and Rochester, Minn., Feb. 23-March 2. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.
NEW HAMPSHIRE: Concord, March 10-11. Sec., Dr. Charles Duncan, Concord.
VERMONT: Burlington, Feb. 8-10. Sec., Dr. W. Scott Nay, Underhill.
WYOMING: Cheyenne, Feb. 7-9. Sec., Dr. J. D. Shingle, Cheyenne.

California October Examination

Dr. Charles B. Pinkham, secretary, California State Board of Medical Examiners, reports the written and oral examination held at Sacramento, Oct. 18-21, 1920. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 35 candidates who took the physician's and surgeon's examination, 29, including 3 osteopaths, passed, and 6, including 2 osteopaths, failed. Five candidates received drugless practitioners' certificates. Two hundred and sixteen candidates, including 14 osteopaths, were licensed by reciprocity. Three candidates were licensed by endorsement of credentials. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
University of Arkansas	(1920)	78.8
College of Physicians and Surgeons, San Francisco	(1918)	78.5
Leland Stanford Junior University	(1920) 87.5, (1920)*	87.8
Yale University	(1917)	86
Northwestern University	(1920)	88.9
Rush Medical College	(1920) 88.6,	89.3
University of Illinois	(1920)	90.5
Indiana University School of Medicine	(1917)	81
University of Kansas School of Medicine	(1917)	89.5
Kentucky School of Medicine	(1906)	86.5
Harvard University	(1920) 90.5,	93.5
University of Oregon	(1918)	88.1
Marquette University	(1920)**	85.1
Aichi Prefecture Special Medical School, Nagoya	(1907)***	
Sai Sei Medical College	(1899)* 77.2,	80
Tokyo Charity Hospital Special Medical School	(1916)***	
University of Leyden	(1908)*	85.2
University of Toronto	(1909) 84, 1911)	86.2
McGill University Faculty of Medicine	(1902)	86.4
(1907) 92.8, (1919) 92.3		
FAILED		
College of Physicians and Surgeons, San Francisco	(1918) 58.2,	70
Prefecture Medical College, Japan	(1908)****	56
University of Glasgow, Scotland	(1884)	69.1

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
University of Arkansas	(1918)	Arkansas
California Medical College	(1905)	Nevada
College of Physicians and Surgeons, Los Angeles	(1912)	Hawaii
Columbian University	(1893)	New York
Georgetown University School of Medicine	(1893)	Nebraska
University of Georgia	(1913), (1919)	Georgia
Bennett Medical College	(1909)	Illinois
Chicago College of Medicine and Surgery	(1913), (1914), (1915), (1917)	Illinois
Chicago Homeopathic Medical College	(1897)	Illinois
College of Phys. and Surgs., Chicago	(1899) (1902) Illinois, (1903) Minnesota, (1904) Washington, (1905) (1906) (1912, 2) Illinois	Indiana
Hahnemann Medical College and Hosp. of Chicago	(1894) (1903) Iowa, (1904), (1912) Illinois	N. Dakota
Illinois Medical College	(1903) Ohio, (1904)	Illinois
Loyola University School of Medicine	(1918)	Illinois
Northwestern University	(1902), (1903) (1903) Wisconsin, (1905), (1906, 2), (1907) Illinois, (1908) Colorado, (1910) Utah, (1912) Iowa, (1912) Utah, (1915), (1917), (1918) Illinois	Illinois
Rush Medical College	(1882) Wisconsin, (1892) (1896) Ohio, (1900) (1903) Illinois, (1903) Montana, (1903) Iowa, (1904), (1911), (1913) Illinois, (1913) Missouri, (1916) Illinois	Illinois
University of Illinois	(1911, 2) (1915)	Illinois
Central Coll. of Phys. and Surgs., Indianapolis	(1898)	Indiana
Eclectic Medical College of Indiana	(1906)	Indiana
Indiana Medical College	(1906)	Indiana
Indiana University	(1910)	Indiana
College of Physicians and Surgeons, Keokuk	(1890)	Oregon
Drake University	(1888), (1894) Iowa, (1900)	Washington

State University of Iowa, Coll. of Homeo. Medicine..(1885) Iowa
State Univ. of Iowa, Coll. of Med..(1887), (1906), (1914) Iowa
University of Kansas School of Medicine.....(1909) Montana
Hospital College of Medicine, Louisville.....(1904) Minnesota
University of Louisville.....(1892) Montana, (1907) Florida
(1919) Kentucky
Tulane University.....(1902), (1919) Louisiana
Medical School of Maine.....(1893) Maine
Baltimore Medical College.....(1888) Vermont, (1906) Connecticut
College of Physicians and Surgeons, Baltimore.....(1882) Missouri
(1912) Connecticut
Johns Hopkins University.....(1909) Alabama, (1912) Michigan
(1913) Maryland, (1915) New York, (1917, 2) Maryland
University of Maryland.....(1892) Texas, (1910) Indiana
Boston University.....(1896) Mass.
College of Physicians and Surgeons, Boston.....(1910) Georgia
Harvard University.....(1882), (1890), (1905) Mass.
(1910) New York, (1916) Connecticut, (1917), (1918), (1919) Massachusetts
Tufts College Medical School.....(1901) S. Dakota
(1908), (1915), (1917) Massachusetts
Detroit Homeopathic College.....(1911) Michigan
Michigan College of Medicine and Surgery, Detroit..(1901) Ohio
University of Michigan Homeo. Medical School.....(1905) Michigan
University of Michigan Medical School.....(1885) Wisconsin
(1896) Utah, (1904) Michigan, (1905) Washington, (1910), (1914), (1915), (1917), (1918) Michigan
Hamline University.....(1897) Illinois, (1908) Minnesota
University of Minnesota.....(1897) Montana, (1897) New York
(1902), (1920, 2) Minnesota
Barnes Medical College.....(1903, 2) Illinois, (1905) Kansas
Ensworth Medical College.....(1908) Missouri
Kansas City Medical College.....(1905) Kansas
Marion-Sims-Beaumont Medical College.....(1903) Illinois
Marion Sims College of Medicine.....(1896) Missouri
National University of Arts and Sciences.....(1914) Missouri
St. Louis College of Phys. and Surgs., St. Louis...(1905) Illinois
St. Louis Medical College.....(1874) Missouri
St. Louis University School of Medicine.....(1916) Arizona
University Medical College of Kansas City.....(1904) Missouri
Washington University Medical School.....(1917) Missouri
(1918) Iowa, (1918), (1919) Missouri
John A. Creighton Medical College.....(1895) Illinois
(1901) Nebraska, (1905) South Dakota, (1913) Nebraska
Columbia University.....(1896) Hawaii
(1899), (1900), (1906), (1918) New York
Fordham University.....(1916) New York
New York Medical College and Hospital for Women...(1904) New York
University and Bellevue Hospital Medical College....(1904) Iowa
(1905) New Hampshire, (1914, 2) New York
University of Buffalo Department of Medicine.....(1906) New York
(1910) Idaho
Cleveland College of Physicians and Surgeons.....(1910) Ohio
Medical College of Ohio.....(1891) Ohio
Ohio Medical University.....(1906) Ohio
Ohio State University College of Medicine..(1915), (1917) Ohio
University of Cincinnati College of Medicine.....(1918) Ohio
Western Reserve University.....(1908), (1916), (1918) Ohio
University of Oregon.....(1890), (1914), (1919) Oregon
Hahnemann Med. Coll. and Hosp. of Philadelphia..(1899) Penna.
Jefferson Medical College of Philadelphia.....(1897) Washington
(1901) Philippine Islands, (1904) North Dakota, (1905) Montana, (1912) Oregon, (1914) Ohio
Medico-Chirurgical College of Philadelphia.....(1895) Penna.
(1899) New Jersey, (1915) Illinois
University of Pennsylvania Department of Medicine..(1899) Colorado
(1903) New York, (1906) Pennsylvania
University of Pittsburgh School of Medicine.....(1917) Penna.
Western Pennsylvania Medical College.....(1899) Penna.
Woman's Medical College of Pennsylvania.....(1901) Penna.
Lincoln Memorial University.....(1912) Tennessee
Meharry Medical College.....(1907) Georgia
(1907) Louisiana, (1917) Tennessee
Memphis Hospital Medical College.....(1911) Oklahoma
University of Texas Department of Medicine.....(1908) Texas
University of Vermont College of Medicine.....(1903) Mass.
Medical College of Virginia, Richmond.....(1915) Virginia
University of Virginia Department of Medicine.....(1895) Arizona
Marquette University.....(1909) Wisconsin
University of Vienna.....(1885) Illinois, (1897) Oregon
University of Palermo.....(1893) Pennsylvania, (1906) Missouri
Okayama Special Medical School.....(1907) *Washington
Manitoba Medical College, Winnipeg.....(1895) S. Dakota
Trinity University Medical Faculty.....(1902) Washington
McGill University.....(1884) N. Dakota

* Graduation not verified.
** Diploma withheld until 1921 pending completion of hospital internship.
*** Grade not given.
**** License not verified.

Minnesota October Examination

Dr. Thomas S. McDavitt, secretary, Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis, Oct. 5-7, 1920. The examination covered 15 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 11 candidates examined, 10 passed and 1 failed. Eighteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University	(1920) 85.5,	(1920)*	87.1
College of Phys. and Surgs., Chicago	(1909) 75.1,	(1920)	89.1
Harvard University	(1906) 85.2,	(1920)	92.2
University of Minnesota Medical School	(1916) 85.1,	(1918)	85.5
Long Island College Hospital, Brooklyn		(1915)	86
Jefferson Medical College of Philadelphia		(1919)	85.5

FAILED

College		Year Grad.	Per Cent.
George Washington University	(1909)		72.6

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Hahnemann Medical College, Chicago		(1919)	Illinois
Northwestern University		(1920)	Illinois
Rush Med. Coll.	(1919, 2) Illinois, (1919) Ohio,	(1920)	Illinois
State University of Iowa College of Medicine		(1896)	Iowa
Sioux City College of Medicine		(1907)	Iowa
Tulane University of Louisiana		(1919)	Mississippi
Baltimore Medical College		(1907)	Louisiana
Tufts College Medical School		(1901)	S. Dakota
University of Michigan Medical School	(1907),	(1917)	Michigan
St. Louis University		(1920)	Missouri
Long Island College Hospital		(1902)	California
University of Vermont College of Medicine		(1888)	Wisconsin
Trinity Medical College		(1901)	N. Dakota

* Diploma withheld until 1921, pending completion of hospital internship.

Idaho October Examination

Hon. Robert O. Jones, commissioner, Department of Law Enforcement, reports the written examination held at Boise, Oct. 5, 1920. The examination covered 16 subjects and included 130 questions. An average of 75 per cent. was required to pass. Sixteen candidates were examined, all of whom passed. Five candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
American Medical Missionary College		(1902)	78.1
Chicago College of Medicine and Surgery		(1910)	82.9
Northwestern University Medical School	(1904) 83.4,	(1915)	84.3
Rush Medical College	(1919) 87.6,	(1920)	85.1
University of Illinois		(1911)	83.1
University of Kansas School of Medicine		(1916)	84.3
University of Louisville		(1907)	78.4
University of Minnesota College of Med. and Surg.		(1907)	84.1
University of Minnesota Medical School		(1914)	86.4
John A. Creighton Medical College		(1896)	76.9
Jefferson Medical College of Philadelphia		(1917)	79.8
University of Tennessee College of Medicine		(1920)	79.6, 83.9
University of Leyden		(1908)	81.5

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University		(1911)	Utah
University of Michigan Medical School		(1872)	Montana
St. Louis University School of Medicine		(1909)	Utah
John A. Creighton Medical College		(1917)	Montana
University of Oregon Medical School		(1916)	Oregon

Porto Rico October Examination

Dr. M. Quevedo Baez, secretary, Porto Rico Board of Medical Examiners, reports the written and practical examination held at San Juan, Oct. 5-9, 1920. The examination covered 9 subjects and included 78 questions. An average of 75 per cent. was required to pass. Of the 11 candidates examined, 10 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University		(1920)	75
University of Maryland	(1918) 88.5,	(1920)	75, 90
Tufts College		(1920)	79, 80.5
Detroit College of Medicine and Surgery		(1920)	77
Jefferson Medical Coll. of Philadelphia		(1919)	84, 85
University of Central Spain, Madrid		(1903)*	82

FAILED

College		Year Grad.	Per Cent.
Loyola University School of Medicine	(1917)		68.6

* Graduation not verified.

Rhode Island October Examination

Dr. Byron U. Richards, secretary, Rhode Island State Board of Health, reports the written and practical examination held at Providence, Oct. 7-8, 1920. The examination covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Of the 9 candidates examined, 7 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Boston University		(1917)	87.7
Harvard University	(1894) 91.7,	(1919)	86.7, 87.3
Columbia University		(1919)	86.9
Jefferson Medical College		(1914)	90
University of Virginia		(1899)	96.5

FAILED

College		Year Grad.	Per Cent.
Eastern University School of Medicine		(1913)	78.5
Laval University Faculty of Medicine		(1919)	78.1

Book Notices

A MANUAL OF NEURASTHENIA (NERVOUS EXHAUSTION). By Ivo Geikie Cobb, M.D., M.R.C.S., Neurologist, Ministry of Pensions. Cloth. Price, $3.75. Pp. 366. New York: William Wood and Company, 1920.

While nearly all textbooks on medicine, especially those dealing with nervous and mental diseases, contain some description of this disease, there has not appeared since the days of Beard, 1868, the originator of the name and the first man to recognize and describe the disease as a separate clinical entity, a book in English as complete as this of Dr. Cobb. The wide divergence of views held by medical authorities, the fact that the disease is on the increase, and the small amount of space allotted to the description of the disease in the average textbook are given as reasons for its publication.

Following a historical review of the literature is a broad outline of the disease from the standpoint of the followers of the physical and psychogenic theories of the disease. While Beard recognized two subdivisions of exhaustion in his descriptions of cerebrosthenia (where the mind was concerned) and myelesthenia (body involvement), his views did not help us in the understanding of the causes of the disease. The possibility that mental symptoms may result from mental causes received no recognition. Janet (and in reference to hysteria, Charcot before him) was the first to claim the opposite; that neurasthenia was caused by abnormal mental processes, while in hysteria the symptoms were attributed to a splitting *en masse* of the personality of the patient with the resulting dissociation, and in psychasthenia (obsessions, phobias, impulsive acts, etc.) the dissociation was in the nature of molecular dissociation of the elements entering the phenomenal consciousness, as a result of which the patient is unable to enter into touch adequately with the real. He regarded neurasthenia as due to a physiologic nervous exhaustion. Dr. Cobb does not look on the theories of Janet as convincing. According to some adherents of the psychanalytic school, neurasthenia belongs to the neuroses and not to the psychoneuroses, the difference lying in the fact that the neuroses owe their conception to the present or recent mental life of the patient, while the psychoneuroses are due to "partially or completely forgotten incidents or fantasies of early childhood that persist in symbolic form in adult life or the reactions against them" (Stoddard), or "it is better to consider neurasthenia as the expression of a very marked auto-erotic fixation, as a return to that infantile period of development in which the child takes a preponderating interest in its own body" (Jelliffe and White: Diseases of the Nervous System).

Dr. Cobb is giving credit to the work of Freud, not because he believes in the sexual theory of Freud, but because Freud's theory of mechanisms—the elements of repression, complexes, conflicts, etc.—so well explain the facts of neurasthenia. In a word, it is the author's belief that while in a certain number of cases the sexual factor may be present, there are many cases in which the cause is an entirely different one. He finds it difficult to believe that every neurasthenic is suffering from a perverted instinct or a repressed anxiety. He believes that other mental factors (anger, jealousy, envy) may possess the power to disturb mental harmony, and that a conflict may arise in matters other than sexual. In admitting other conflicts, the author believes that he "shall not be more rash than the advocates of the sexual theory where they limit so arbitrarily the mental causes to the sexual."

"A tentative thesis," as offered by Dr. Cobb, is that "all pathological mental processes originate in a repression of the powers of Self." As a definition of Self, the one given by William James is accepted. "Preoccupation with this limited self brings with it the perils which are attendant on all compression of force. Human nature is too big a thing that it can be contained safely behind the prison walls of any material self."

The summing up of this thesis is that the psychic and physical interact, and any disturbance of psychic disposition may develop along lines which lead to physical or psychic ill health or both. The general law for the formulation of psychic ills is that they arise as the result of mental conflict. When this takes place we get a lowered vitality, the bitterness of which tends to be increased by the consciousness that it ought not to be. Joy in living should be regarded as the norm of human life and its justification. When this joy is diminished, when conflict claims the mental energy instead of externalia which might stimulate joy into being, egoism results. This mental state may lead to the establishment of neurasthenia. Neurasthenia, then, is a psychophysical disorder and as such often presents mental characteristics.

The chapters on symptomatology, differential diagnosis and treatment, including general hygiene of neurasthenics and drug treatment and psychotherapy (suggestion, persuasion, psychologic analysis, reeducation, etc.) are exhaustive and well written. The reproach of the author regarding the curriculums of medical schools, that so little attention has been paid to the study of functional disturbances, is a timely one.

FOOD INSPECTION AND ANALYSIS. For the Use of Public Analysts, Health Officers, Sanitary Chemists and Food Economists. By Albert E. Leach, S.B. Revised and Enlarged by Andrew L. Winton, Ph.D. Fourth edition. Cloth. Price, $8.50. Pp. 1090. New York: John Wiley & Sons, 1920.

The fourth edition of this standard book, initiated by Albert E. Leach, late chief analyst of the Massachusetts State Board of Health, is the result of a rather thorough revision by Dr. A. L. Winton. The general arrangement and treatment of the subjects do not differ greatly from previous editions, but newer methods of investigations of foods have been incorporated. As is so often the case when standard works are revised, authors are slow in bringing the illustrations up to date; so here the "cuts" of various forms of apparatus are not in keeping with what should be expected of a progressive book; for instance, the "Gladding apparatus for determination of boric acid" (p. 884) calls for the boiling of methyl alcohol by means of a free flame! Also it is rather surprising to read (p. 1014) that cocain is still an ingredient of certain proprietary syrups and beverages; this was the case a number of years ago but does not hold true today, thanks to our various food and drug laws. A valuable addition to the book is the chapter by Dr. G. L. Wendt on the "Determination of Acidity by Means of the Hydrogen Electrode." This chapter should be of considerable aid to the medical laboratory workers who more and more are abandoning the "indicators" in favor of the more satisfactory p_H. Dr. Wendt has not detailed the great mass of theory on which such determinations are based; he has given, however, sufficient discussion of the physical deductions to enable a worker to follow the method knowingly, while the apparatus described is accurate for ordinary needs and still retains the element of relative simplicity. Laboratory workers and those in the administrative positions of health enforcement should find this book most valuable.

PRINCIPLES OF BIOCHEMISTRY. For Students of Medicine, Agriculture and Related Sciences. By T. Brailsford Robertson, Ph.D., D.Sc., Professor of Physiology and Biochemistry in the University of Adelaide, South Australia. Cloth. Price, $8. Pp. 633, with 49 illustrations. Philadelphia: Lea & Febiger, 1920.

As indicated by the title, this work discusses the principles of biochemistry and does not pretend to catalogue the accumulated data of the subject. The discussion is from the standpoint of physiology rather than that of chemistry, which makes it far more readable and intelligible to the medical student and practitioner than are most treatises on biologic chemistry. Therein lies its chief value, for it is not an exhaustive presentation of the present state of our knowledge, which would demand a condensation of data impossible of ready assimilation; rather, it discourses agreeably and lucidly of the matters of general interest, and considers their bearing on the wide fields of biology, medicine and agriculture. The scope and manner of presentation are indicated by the fact that it is divided into six parts, dealing with foods; properties of protoplasm; chemical correlation of the tissues; chemical processes that underlie and accompany life phenomena; products of tissue activity, and the energy balance of the organism. These subjects indicate plainly that the point of view is essentially biologic rather than chemical, and in places this attitude is carried to such extremes as to include topics that seem to be far from a chemical interpretation, such as

memory, sleep, and "the fading of memory traces"; nevertheless, the last process is shown to present a "curve of forgetting," which resembles the curve that expresses the rate of issuance of a colloid from a colloidal into a fluid menstrum. The conclusion that "the fading of a memory trace . . . may not improbably be due to the washing out of a colloidal substance, which forms the memory trace, by the circulating fluids," is a somewhat wider departure from the beaten tracks of biochemical thought than most of the author's presentations. Hypercritical readers may note that the very latest points of view and contributions are not always recognized, and that some of the statements made are therefore subject to qualification; but these defects can be remedied in subsequent editions. Within the limitations of scope defined for the book by its author, it is a valuable addition to biologic literature, for it may be used by a wide circle of readers, and presents the subject matter of biochemistry from a standpoint that makes it of vital interest, and therefore less subject to the processes of the "fading of memory traces." Physicians who wish to familiarize themselves with biochemical science by a course of reading will be able to secure here what they are seeking without finding themselves too seriously handicapped by the prominence of chemical features usual in works in this field, although the essential chemical facts are all presented in an adequate manner. An unusual chapter, on the outlook of biochemistry, closes the book, with fascinating predictions of a millenial return of the fields and forests from their uses for agriculture to a universal playground, when artificial photosynthesis permits of the production of our food and clothing in the chemical factory, to say nothing of the production of "cold light" when we understand the oxidative processes that underlie luminescence in animal organisms, together with many other suggestions of advances that promise more early achievement. Even senescence "must ultimately fall under the sway of human intellect Dr. Robertson believes, but he is less optimistic concerning the artificial creation of living matter, which problem probably troubles most of us less than that of senescence.

DIABETES: A HANDBOOK FOR PHYSICIANS AND THEIR PATIENTS. By Philip Horowitz, M.D. Cloth. Price, $2. Pp. 196, with 29 illustrations. New York: Paul B. Hoeber, 1920.

This is a small book that may be read in an hour. It is intended to be placed in the hands of physicians and patients. Half of it consists of a compilation of menus, recipes, tables and instructions for testing the urine. Little of this material is new. In the other half the writer states his views concerning the etiology of diabetes and, by case reports, illustrates the manner in which he manages diabetic patients. He believes that diabetes is the result of "autointoxication causing an interference with the ductless glands," basing his conclusions on points discussed in an earlier paper by himself, and on the results of animal experimentation "which will be reported later." Perusal of the case reports shows that he regulates the diet much in accordance with familiar teachings, and supplements the dietary regulation by calisthenics and by measures calculated to reduce intestinal intoxication, namely, the administration of lactic acid bacilli, irrigation of the bowel, etc.

DIAGNOSE DER SIMULATION NERVÖSER SYMPTOME AUF GRUND EINER DIFFERENTIALDIAGNOSTISCHEN BEARBEITUNG DER EINZELNEN PHÄNOMENE. Ein Lehrbuch für den Praktiker. Von Prof. Dr. Siegmund Erben. Second edition. Paper. Price, 56 marks. Pp. 254, with 28 illustrations. Berlin: Urban & Schwarzenberg, 1920.

This work is based on a course of lectures on the diagnosis of nervous diseases for medical men connected with the extensive industrial insurance of Austria. The first edition appeared in 1912. In this edition the author has added experiences contributed by the war. The ordinary symptoms indicating involvement of the nervous system are considered in some detail, especially such as occur in industrial accidents and the disorders of working men. Special attention is paid to the symptoms of neurasthenia, pain, especially backache and back pain, sciatica, paralyses, tremor and dizziness. Physicians active in industrial medicine will find this monograph interesting and instructive, and those active in medicolegal practice will find many useful hints.

Medicolegal

Board May Employ Physician to Examine for Smallpox

(Bartlett v. Dahlsten et al. (Neb.), 178 N. W. R. 636)

The Supreme Court of Nebraska says that this action was brought by a physician to recover from Wheeler County, on an alleged contract, $214 for services rendered in the examination of a number of persons, residents of the county, during a smallpox epidemic. There was evidence tending to show that the physician on the board of health was unable to diagnose the disease, and called it "Cuban itch." No quarantine had been established, and many persons afflicted with the disease walked about the streets and in public, so that the epidemic got well under way before it was discovered what the ailment was. The plaintiff undertook the work, in this emergency, at the instance of the county board of health. Each of the specific examinations was made at the request of the board. When his services were completed, he filed a claim, which was disallowed by the board of county commissioners; and he appealed to the district court, where he got a judgment for the full amount of his claim. The fees charged were shown to be reasonable; but the defendant contended that the individuals receiving the services should be required to pay for them, and not the county, since, with one exception, they were not paupers and not a county charge. But the judgment in favor of the plaintiff is affirmed, the plaintiff to recover costs, on condition of his remitting $57 charged for services to individuals who were residents of incorporated towns.

By Sections 2737 and 2738 of the Revised Statutes of Nebraska of 1913, the county board of the county is directed to make and enforce regulations to prevent the introduction and spread of contagious diseases within the county, and, to that end, to establish a county board of health, which is given jurisdiction over the matter throughout the county, except in incorporated cities and villages. Where the local board fails to act with sufficient promptitude and efficiency in any emergency, it is expressly provided that the state board of health shall step in and enforce its own regulations in that county, and that the necessary expenses so incurred shall be borne by the county. It would seem to follow that when the county itself acts in an emergency it was not intended that it be limited in its powers more than the state board, and that the necessary expenses incurred should, in that event, also be chargeable to the county. Though it is not expressly provided that when the county acts in providing regulations to prevent the spread of disease the necessary expenses so incurred shall be a charge against the county, that liability must necessarily be inferred. If this were not true, then the county would, by law, be required to perform a duty and at the same time be prevented from using the means necessary to its performance. The county board could not quarantine without learning, through the services of a physician, whom to quarantine, and such services of a physician could not be procured without pay. The right of the duly constituted county authorities to employ a physician in an emergency of this kind seems to the court to come clearly within the express authority given to the county to provide and enforce regulations in order to prevent the introduction and spread of contagious diseases, and it must be that the examination and diagnosis necessary for purposes of quarantine of contagious diseases is one of the regulations contemplated and intended to be covered by the statute. When a physician performs services of such kind for the county he, of course, ought to be allowed to recover from the county, though the individuals examined and quarantined were not paupers or a county charge. The obligation of the county rests on contract, and, though it might be that the individual would be liable, the county is at least primarily liable to the physician. However, the jurisdiction of the county board in this case was limited by statute to that territory within the county, outside the limits of incorporated cities and towns.

It was urged that the county commissioners had no jurisdiction to pass on the claim because, as filed under Section 965, it alleged that the "account is just and correct" and that

the "amount claimed, after allowing all just credits, is wholly unpaid," but contained no affirmative allegation that the amount was due, while the statute requires a showing that the items are "just and true" and that the amount claimed is "due and unpaid." But the claim had attached to it a statement, purporting to be an account in favor of the plaintiff and against the county, and showing a balance of $214 in the plaintiff's favor; and the court holds that the board was vested with jurisdiction to pass on the claim.

As to an Alleged Conspiracy to Enforce Medical Law

(Nesmith v. State (Ohio), 128 N. E. R. 57)

The Supreme Court of Ohio, in affirming a judgment of conviction of defendant Nesmith of practicing medicine without a license, says that one of his claims of error was at least a novel one. It was that his counsel in his opening statement to the jury was unreasonably limited by the trial judge when he undertook to state to the jury that there was a conspiracy among certain persons in the county to prosecute the defendant and deprive him of the right of practicing medicine as a chiropractic, and that the trial court likewise unreasonably limited the defendant in refusing to permit him to introduce testimony in evidence tending to show such conspiracy. But there was no error in either respect. Conspiracies are often charged as being formed for the purpose of avoiding or defeating the law, of nullifying the law, but it is rather unusual to find a charge of conspiracy to enforce the law. If there could be more leagues, or covenants, to bring about the enforcement and administration of the law as it is written, we should probably have a less lawless people; law and order being at the foundation of all stable and successful governments. It is somewhat difficult to understand how obedience and respect for law on the part of certain groups of citizens, as against others disposed to defy or defeat the law, could be utilized to enable the latter to violate the law with immunity or impunity. Obviously, if any witness called by the state to establish any essential elements of a crime charged were exercising any special zeal or interest in the transaction concerning which he was examined, such fact might be shown as affecting his credibility; but such a status nowhere appeared in this case.

It has long been well settled in the jurisprudence of Ohio as well as of other states that the general assembly has the right reasonably to regulate business and occupations and those desiring to follow them, especially physicians and surgeons. In addition, legislation of the character in question in this case is clearly within the police power on the further and higher ground, the regulation of public health. All persons engaged in the practice of the healing art need have special qualifications touching the knowledge of the human body in all its parts, their normal and abnormal relations—not only knowledge that would enable such persons carefully and correctly to diagnose physical and mental ailments, but also an ability to prescribe the proper treatment therefor. The public needs relating to the conservation of the public health are so manifest that it would seem unnecessary to consider further the general scope of this character of legislation, as to whether or not it is within proper constitutional limitations.

Validity and Evidence of Contract for Services

(Collins v. Joyce et al. (Minn.), 178 N. W. R. 503)

The Supreme Court of Minnesota, in affirming an order in favor of the plaintiff, a physician and surgeon, says that he brought this action to recover the value of hospital services and medicines for an injured employee of the defendants, and that the plaintiff obtained a verdict for $325. The defendants and the employee were within the scope of the workmen's compensation act, which made it the duty of the defendants to provide the employee with medical and surgical treatment and medicines and medical and surgical supplies up to $100, though the court administering the compensation act might, under certain conditions, allow $200. The defendants contended that, inasmuch as the statute made it the duty of the defendants to provide this service for the employee up to a certain amount only, a contract to pay more than that amount would not be implied from a request to perform this service, nor could a verdict be sustained for more than the amount fixed by the compensation law, on the theory of an express contract. The supreme court, however, was not called on to consider the principles of implied contract applicable to such cases, as this action was plainly based on an express contract, and was so submitted to the jury. The court sees no good reason why the defendants might not agree to furnish medical and hospital attention and supplies to their employee in excess of their statutory obligation, if they saw fit to do so, and no reason why they might not obligate themselves to pay the plaintiff the full value of such services, furnished to their employee at their request. The question was: Did they so obligate themselves? The plaintiff testified that one of the defendants, who did business as a firm, called him, and that, while they were on their way to attend the employee, the plaintiff asked, "What about my pay?" The defendant replied: "We carry insurance; we get our money from the insurance company, and then we pay you; you don't need to worry about that." The fact probably was that neither party thought or knew of the limitation of the compensation act. The supreme court thinks the jury might construe the language used as a contract to pay the value of the services the plaintiff should render to the employee. In other words, the court holds that an employer, though operating under the workmen's compensation act, may agree, with a physician called by him to treat an injured employee, to pay the full value of the physician's services; and that the evidence in this case sustained a finding that the defendants made such an agreement.

The court also holds that proof of a verbal assurance of payment given after services have been rendered, though not admissible, under the statute of frauds of Minnesota, to prove a contract, may be properly received as an admission of a contract previously made. For example, in this case, the plaintiff was permitted to offer proof of a statement alleged to have been made to him by the other defendant, after the services were rendered, that: "You needn't worry about your pay. We will see to it that you are paid. We took him down there, and we are responsible for your payment." This evidence was properly received as an admission of the contract which the plaintiff testified had previously been made.

Then, the question to whom credit was given by the physician being in controversy, it was proper to permit him to testify that he rendered his services on the credit of the employers. That is to say, after the defendants had offered proof tending to show that the plaintiff gave credit to the employee, it was proper to permit the plaintiff to say that he performed his services on the credit of the defendants and not of the employee. That was a material point in the case. It was proper that the plaintiff should testify, directly, to whom credit was given. That was within the general rule that, whenever the motive, belief or intention of any person is a material fact to be proved, it is competent to prove it by the direct testimony of such party.

Basing Unsoundness of Mind on Bodily Condition

(In re Hook's Will (Iowa), 178 N. W. R. 357)

The Supreme Court of Iowa, in reversing a judgment sustaining a will because the judgment was rendered on a directed verdict instead of the case having been left to the jury, says that the contestants of the will introduced the evidence of the attending physician and of two other physicians who had attended the testator on one or two occasions during his illness. These physicians all testified to their opinion that he was mentally unsound. This opinion, however, was based in part at least on the convenient theory that as the testator was bodily sick he could not have been mentally sound; that the mind is dependent on the brain and the brain is dependent on the other organs of the body; and that a necropsy disclosed a mortal condition of all such organs, though no examination was made of the brain. Such theory is mere subtlety and not medical expert opinion. It is of no aid to a judicial investigation of the sufficient mental capacity of a testator to make a will. So far, therefore, as this feature of the medical testimony was concerned, this court disregarded it in reaching its conclusion.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

January, 1921, 21, No. 1

*Food Requirements of Children. L. E. Holt and H. L. Fales, New York.—p. 1.
*Calcium in Blood of Children. W. Denis and F. B. Talbot, Boston.—p. 29.
*Ulcerated Meatus in Circumcised Child. J. Brennemann, Chicago.—p. 38.
*Tuberculosis in Infants and Young Children. M. Wollstein and R. C. Spence, New York.—p. 48.
*Chronic Tuberculous Hilus Pneumonia in Children. Report of Cases. D. Greenberg, New York.—p. 65.
*Complement Fixation for Tuberculosis in Children. J. V. Cooke, St. Louis.—p. 78.
Precipitins to Egg White in Urine of New-Born Infants. C. G. Grulee and B. E. Bonar, Chicago.—p. 87.
Blood Volume in Infants Estimated by Vital Dye Method. W. P. Lucas and B. F. Dearing, San Francisco.—p. 96.

Food Requirements of Children.—The average caloric requirement of children, according to the observations of Holt and Fales in about 100 calories per kilogram at an age of 1 year (about 9.5 kilograms). For boys it falls to about 80 calories at 6 years (about 20 kilograms) and remains practically constant at this value up to the age of 15 years, the increasing requirements for activity being met by the reduction in basal requirements per kilogram. After a weight of 50 kilograms (about 15 years), is reached the calories per kilogram can rapidly be reduced to adult standards, about 48 calories per kilogram. The requirement for girls falls to 76 calories per kilogram at 6 years (about 20 kilograms), continues at this value until the tenth year. During the tenth year it rises because the basal requirement is nearly constant while there is an increase in needs for growth and activity. The requirement remains at 80 calories per kilogram until growth is complete, then falls rapidly to adult standards, about 44 calories per kilogram. The total daily caloric requirement of children of both sexes during adolescence exceeds by nearly 1,000 calories the requirements of the adult man or woman of moderate activity. It seems the right procedure to allow for children during the period of adolescense more calories than the adult ration and, as growth needs end, to diminish the caloric allowance to the adult standard.

Calcium in Blood of Children.—As the result of a series of observations of the calcium and magnesium content of the blood of 119 children, Denis and Talbot have found that a low calcium content of the serum frequently occurs in infantile tetany, acute rickets and pneumonia. In one case of tetany there was a considerable increase in the blood calcium after the administration of calcium chlorid by mouth. Several cases of epilepsy had a low blood calcium. The significance of these findings is as yet uncertain.

Ulcerated Meatus in Circumcised Child.—A peculiar lesion of the meatus urinarius occurring only in circumscised male children is described by Brennemann. It is caused by the "ammoniacal diaper." The etiology of the "ammoniacal diaper" is still obscure but seems due to one or both of two factors: a dietetic error that increases the ammonium or urea content of the urine, and the presence of an alkali or of certain bacteria in the diaper. The treatment consists in correcting, if possible, the dietetic error and in thorough rinsing and boiling of the diapers, night clothes and bedding.

Tuberculosis in Infants and Children.—The study made by Wollstein and Spencer emphasize the great frequency of tuberculosis in infancy and early childhood, the suggestive decline of tuberculosis among the young children admitted to the Babies' Hospital during the last six years; the greater incidence of tuberculosis of infants and young children acquired by inspiring tubercle bacilli compared with that acquired by swallowing the bacilli with milk or food; the rapid generalization of tuberculosis in young subjects, the rapidity and degree of generalization being, as a rule, in inverse proportion to the age; the great frequency with which termination by tuberculous meningitis occurs, and the absence of any case of healed tuberculosis from this series of 184 necropsies on tuberculous children.

Chronic Tuberculous Hilus Pneumonia.—The type of tuberculosis to which Greenberg calls attention is a diffuse or parenchymatous process involving that portion of the lung immediately adjacent to the hilus. It is characterized by a gradual onset, comparatively mild constitutional symptoms, fairly definite physical signs (except early) and, as a rule, ends in recovery.

Complement Fixation for Tuberculosis in Children.—Cooke gives the results of the examination of a large number of serums from infants and children by the complement fixation test using an antigen made from human tubercle bacilli. In every case a clinical diagnosis was made without reference to the result of the fixation test. In all 1,855 fixation tests were done on 1,556 children. The test proved of considerable value not only in calling attention to cases of tuberculosis without well defined clinical signs, but in making a decision regarding the presence of active tuberculous foci in children exposed to the disease and also in following the foci in children exposed to the disease and also in following the course of a healing lesion. The complement fixation reaction, however, is of most value when used as an aid to a careful and complete physical examination of the patient. The results show that a positive fixation reaction is associated in a large majority of cases with a tuberculous lesion that is pathologically if not clinically active; hence, a patient reacting positively should not be considered free from active tuberculosis.

American Journal of Roentgenology, New York

December, 1920, 7, No. 12

Roentgenology in Mayo Clinic. R. D. Carman, Rochester, Minn.—p. 577.
Graduate Education in Roentgenology. L. B. Wilson, Rochester, Minn.—p. 580.
Topical Applications of Radium. H. H. Bowing, Rochester, Minn.—p. 582.
Roentgen-Ray Examination of Urinary Tract Made Opaque. W. F. Braasch, Rochester, Minn.—p. 584.
Roentgenology in Diseases of Teeth. B. S. Gardner, Rochester, Minn.—p. 587.
Osteocartilaginous Joint Bodies. M. S. Henderson, Rochester, Minn.—p. 588.
Chronic Gastric Ulcer and Gastric Carcinoma. W. C. MacCarty, Rochester, Minn.—p. 591.
Pre-Operative and Postoperative Roentgen-Ray Therapy in Carcinoma of Breast. D. Quick, New York.—p. 597.
Case of Pedunculated Adenocarcinoma of Stomach and Possible Errors in Diagnosis. E. P. Pendergrass and H. K. Pancoast, Philadelphia.—p. 602.
*Roentgen-Ray Treatment of Leukemia. W. O. Upson, Battle Creek, Mich.—p. 608.
Radium Element Versus Emanation. A. Soiland, Los Angeles, Calif.—p. 612.
Spring-Clip for Holding Films on Illumination Box. G. E. Pfahler, Philadelphia.—p. 614.

Roentgen-Ray Treatment of Leukemia.—Upson reports a case in which treatment has been persisted in for a period of four years with considerable benefit to the patient. In 1916 he had three series of treatment, the leukocyte count being reduced from 142,500 to 9,000. The patient returned for further treatment ten months later with a leukocyte count of 225,000. In one month this was reduced to 65,000. In 1918 another series of treatments was given with equally good results. The patient returned again for examination in April, 1919. Since his treatment in the previous year he had remained subjectively very well. His strength had been very good and he had been busily at work most of the time. However, a few weeks before returning here he noticed that his spleen had begun to enlarge and he thought it best to appear for a new examination. Treatments yielded the usual good results. The patient came back again in February, 1920, for further treatment. One series of treatments was given, paying special attention to the proximal ends of the long bones, after which the spleen was treated by the usual cross-fire method. When the treatment was started the white blood count was 206,200. A few days after the series was completed the last blood count was taken, which showed a white count of 67,000. The spleen had materially decreased in size, but not to normal. The patient's general condition had decidedly improved and he had gained several pounds in weight.

Boston Medical and Surgical Journal

Jan. 13, 1921, **184**, No. 2

League of Red Cross Societies. R. P. Strong, Boston.—p. 27.
Scoliosis. H. W. Marshall, Boston.—p. 31.
Necessity of Maintaining Proper Standards of Nursing Care. E. H. Cohoon, Medfield, Mass.—p. 40.
Conditions in Palestine During the War and Medical Relief Among the Civil Population and the Refugees. I. Alcazar, Boston.—p. 45.

California State Journal of Medicine, San Francisco

Jan. 1921, **19**, No. 1

Problems of Enforcement of the Medical Act. C. B. Pinkham, San Francisco.—p. 6.
Present Nursing Situation. W. W. Roblee, Riverside.—p. 8.
Plea for Better Fracture Results. G. J. McChesney, San Francisco. —p. 11.
Practical Points in Using Thomas Splints. S. Bunnell, San Francisco. —p. 13.
*Clinical and Laboratory Findings in Pyelitis and Pyelonephritis. L. J. Roth, Los Angeles.—p. 16.
*Improved Incision for Fredet Rammstedt Operation. E. B. Butler, San Francisco.—p. 17.
Involvement of Genito-Urinary Tract Associated with Active Pulmonary Tuberculosis. A. Peterson, Los Angeles.—p. 18.
Vesico-Intestinal Fistula. L. C. Jacobs, San Francisco.—p. 19.
Ureteral Transplants for Obstruction of Lower Ureter. R. V. Day, Los Angeles.—p. 21.
Significance of Spinal Defects and Pain Occurring in Relation to Ocular Disease. L. Mills, Los Angeles.—p. 23.
*Group Study of Three Hundred Cases of Arthritis. M. C. Harding, San Diego.—p. 26.
Etiology of One Hundred Fifty Cases of Bronchial Asthma. G. Pineus, Los Angeles.—p. 29.
Study of Nasal Conditions Occurring in Bronchial Asthma. S. Jesberg, Los Angeles.—p. 33.

Pyelitis and Pyelonephritis.—Roth says the presence of blood in pyelitis and pyelonephritis is not as frequent or abundant as one would imagine considering the early stage pathology, and yet one of his cases had copious recurrent hematuria with pain and marked febrile course for a period of seven years, and the nephrectomized specimen was benign, nearly functionless fibrosed gland with obliterated calyces. The urine was loaded with pus but contained no casts. The white counts in these cases has such varying results that all attempts to associate the high leukocytosis with circumscribed suppurative processes failed. In fact a leukocytosis of varying intensity occurred in practically all cases, and the highest count (28,620) was found in a chronic pyelonephritis without abscess formation and the next lowest count (8,116) was in a case of cold pelvic abscess of foul content which involved the right kidney by obstructing its ureter. An intermediary count of 17,000 was found in a fulminant case of multiple abscesses with thick purulent discharge from the right kidney. The infection was so severe that the patient succumbed twenty-four hours after a too long delayed nephrectomy. Worse in pathology, but with a white count of only 13,368 was another case of multiple abscesses in which urinalysis showed no casts, very few pus cells and very few bacteria. This patient made a perfect recovery following nephrectomy. The lowest count of 7,321 was associated with a tender, large kidney with no evidence of other focal infection, that ran a septic course with drenching sweats for several weeks and finally recovered spontaneously. The urine showed no casts, many pus cells and but few bacilli. It seems apparent to Roth that the blood count has no distinctive diagnostic value from a numerical point of view, that is, a leukocytosis of 10,000 is as efficient in information as a count of 20,000. Thus in no instance has it been possible to differentiate draining, mild urinary infections from closed collections of pus.

New Incision for Fredet-Rammstedt Operation.—The improved incision described by Butler, called "the flood gate incision," is made over the quadrate lobe of the liver above its free margin. This incision may be completed while the child is straining without any hollow viscera or omentum escaping; the liver moves with respiration and bulges slightly into the wound if the abdominal muscles tighten. This incision is particularly useful when operating under local anesthesia. The dorsal surface of the operator's left index finger slipped into the wound easily displaces the "flood gate," the quadrate lobe of the liver, superiorly. The pylorus lies directly posterior to the quadrate lobe and is easily grasped between the index finger and thumb of the operator's left hand and elevated through the wound.

Arthritis.—The work reported by Harding was done at the U. S. Army Base Hospital, Camp Lewis, Washington, D. C. In 89 per cent. of the cases some infectious process other than that in the joints themselves was found and treated. The blood cultures were all negative. As to types of infection, Harding is not at all convinced that the particular gem present in a tooth or tonsil is necessarily the sole causative factor in the joint condition. Ninety per cent. of these men had had a precious attack. This is of importance in that they were all young men, which points to the similarity to tuberculosis in the childhood invasion of lymphatic and synovial tissues. Arthritis in the child calls for a painstaking cleaning up of all courses of infection, for he will otherwise most certainly have other attacks later in life. Heart complications were rare. Not more than half a dozen were found. None proved fatal, or even crippling. The absence of gastro-intestinal diseases proved surprising. Not a chronic gallbladder nor appendiceal infection was found in the entire series. The typical monarticular gonorrheal arthritic or peri-arthritic was very rare. It made up not more than 2 or 3 per cent. The bulk of the cases having a demonstrable gonorrheal focus presented the same varied types of arthritis as the nongonorrheal. Syphilitic arthritis proved, as expected to be, a small factor. Confinement to bed, free catharsis and spliting of the painful joints was the routine treatment. Sodium salicylate and sodium bicarbonate were given nearly all acute cases in the following manner: A stock mixture containing 2 grains of bicarbonate to 1 grain of salicylate was prepared. The daily dose was from 200 to 400 grains divided into six doses, and each taken in a pint of water. Intravenous triple typhoid vaccine was given for the nonspecific protein reaction in seventeen cases. The results were ufavorable. The chronic cases, in addition to surgery, were given much local treatment, consisting of high temperature baking, massage, and graduated exercise. A patient will rarely damage his joint by activity which is not distinctly painful. On the other hand, to force a painful joint by passive motion is only to invite more trouble. As to the Alpine sun lamps, Harding is convinced that in joint diseases their value is solely as a counter irritant. As such they should be used to produce a blister of desired size and location. The skin should be prepared surgically, the burning done—which is painless—and a sterile dressing applied. Harding cannot see in them a substitute for California sunlight.

Iowa State Medical Society Journal, Des Moines

January, 1921, **11**, No. 1

Infections of Kidney. H. Cabot, Boston.—p. 1.
Relationship of Eye to Focal Infection. S. D. Maiden, Council Bluffs. —p. 8.
Roentgenology in Pulmonary Diseases. H. M. Decker, Davenport.—p. 11.
Before and After Operation. N. Schilling, New Hampton.—p. 14.
Education and Recreation in Army. G. W. G. Haan, U. S. Army.—p. 19.

Journal of Infectious Diseases, Chicago

January, 1921, **28**, No. 1

*Experimental Streptococcus Empyema. II. Attempts at Dye Therapy. F. P. Gay and L. F. Morrison, Berkeley.—p. 1.
*Action of Certain Salts on Phagocytosis and Virulence of Streptococci. T. Otsubo, Chicago.—p. 18.
Spontaneous Epidemic Among Laboratory Rabbits Caused by a Paratyphoid B. Bacillus Related to Rodent Group. V. M. Litch and K. F. Meyer, San Francisco.—p. 27.
Paratyphoid Bacilli from Chicks. R. S. Spray and L. P. Doyle, Lafayette, Ind.—p. 43.
*Ocular Reactions in Anaphylaxis. R. Kodama, Chicago.—p. 48.
*Visibility and Growth of B. Typhosus in Bile. T. D. Beckwith and R. H. Lyon, Berkeley, Calif.—p. 62.
Fate of Micro-organisms Introduced into Isolated Loops of Intestine. E. H. Eiskamp and L. K. Park, Palo Alto, Calif.—p. 67.
*Heat Resistance of Spores with Special Reference to Spores of B. Botulinus. H. Weiss, Boston.—p. 70.

Experimental Streptococcus Empyema.—The results obtained by Gay and Morrison do not justify anticipation of practical therapeutic results from the use of dyestuffs in empyema due to the streptococcus.

Action of Salts on Phagocytosis.—Otsubo used M/8 solutions of various salts, diluting when necessary with physiologic sodium chlorid solution, and a typically hemolytic streptococcus isolated from the frontal sinus and cultivated arti-

ficially for about two years. The preparations were stained with Wright's method. He found phagocytosis of streptococci in the peritoneal cavity of the mouse is diminished by M/8 solutions of certain salts (magnesium sulphate, magnesium chlorid, strontium chlorid, sodium carbonate, calcium chlorid and sodium citrate). Potassium iodid and fat assium bromid inhibit in lesser degree. Alkalinity of the blood and also the phagocytic power of the peritoneal exudate.

Ocular Reactions in Anaphylaxis.—Generally speaking, Kodama says, the immediate effect of the application of horse serum applied to the eye of normal and of sensitized guinea-pigs is dilatation of the lid and pupil succeeded by contraction. In the sensitized animal, however, the response is more prompt and vigorous. In addition to these phenomena, anaphylactic intoxication with horse serum may be associated with more or less well marked circulatory disturbances with edema and congestion of lid, conjunctiva, iris and ocular fundus, hemorrhages of epibulbar and retinal vessels. The direct application to the eye of horse serum, heated or unheated, may cause vascular dilatation in the normal, but hemorrhage is observed, especially in the sensitized guinea-pigs, and this effect may be obtained independently of asphyxia; hence it is due to direct action on the vessels. In addition to the characteristic postmortem appearance of anaphylactic shock, seen especially in the dilatation of the lungs, congestion and hemorrhagic extravasation, Kodama says we have also to make special note of a rapid and strong contraction of the pupil after anaphylactic death.

Viability of Typhoid Bacillus in Bile.—The strain of *B. typhosus* used by Beckwith and Lyon in their experiments was isolated originally from a carrier. It proved to be extremely long lived in human, ox and rabbit bile.

Heat Resistance of B. Botulinus.—Weiss states that the free spores of *B. botulinus* are destroyed within five hours at 100 C., within forty minutes at 105 C., and within six minutes at 120 C. Bath temperatures are indicated. These thermal death points were determined under optimum conditions for survival.

Kansas Medical Society Journal, Topeka

January, 1921, **21**, No. 1

Psychotherapy. J. H. Cooper, Topeka.—p. 1.
Episiotomy as Means of Preventing Severe Lacerations of Perineum. L. Leverick, Kansas City, Kan.—p. 5.
Syphilis in Innocent. H. G. Collins, Topeka.—p. 7.
Faith Cures and How They Act Contrasted with Principles of Scientific Mental Healing. T. A. Williams, Washington, D. C.—p. 11.

Medical Record, New York

Jan. 15, 1921, **99**, No. 3

Delicate, Nervous and Backward Child as Medical Problem. E. B. McCready, Pittsburgh.—p. 85.
*Myomectomy vs. Radium and Roentgen-Ray in Treatment of Fibroid Tumors in Women under Forty Years of Age. H. N. Vineberg, New York.—p. 91.
*Tumor of Spinal Cord and Its Membranes. N. Sharpe, New York.—p. 93.
Concept of Roentgen-Ray Pathology. Pleuropathy. A. J. Pacini, Washington, D. C.—p. 98.
Caloric Valuation of Food. M. Malkin, Chicago.—p. 101.
Spontaneous Rupture of Uterine Artery During Confinement. J. C. Major, Joliet, Ill.—p. 102.

Myomectomy, Radium and Roentgen Ray in Treatment of Fibroids.—The roentgen rays and radium, in Vineberg's opinion, have their uses in the treatment of fibroids, even in young women. There are certain women to whom the dread of an operation is so great that they will go on suffering pain and loss of blood rather than submit to it. Such patients Vineberg refers to the roentgenologist or radiologist; also those who have a constitutional dyscrasia which would render an operation unusually dangerous. Every patient who consults him regarding a fibroid tumor causing symptoms, is told she may have her choice of treatment, either by operation, or by roentgen ray or radium. Vineberg says he tells her, regardless of her age, that the *one* (operation) perhaps carries more risk with it than do the others, but that in his opinion it is more certain of permanent cure. If she is under 40 he tries to impress her with the advantages, of which he is strongly convinced, of submitting to an operation, the endeavor of which would be to remove her tumor or tumors and preserve her menstrual function.

Tumors of Spinal Cord and Its Membranes.—Two cases of tumor of the spinal cord are cited by Sharpe as illustrating how tumor at times may simulate organic disease, and the amount of compression the cord can successfully withstand if gradually applied.

Journal of Nervous and Mental Disease

Jan., 22, 1921, **99**, No. 4

*Amnesia, the Subconscious Warehouse. J. A. Gilbert, Portland, Ore.—p. 127.
Hyperthyroidism. M. F. Morris, Atlanta, Ga.—p. 133.
Concept of Roentgen-Ray Pathology; Cardiopathy. A. J. Pacini, Washington, D. C.—p. 136.
Diet as Postoperative Factor in Gastro-intestinal Disorders. L. H. Levy, New Haven, Conn.—p. 142.
*Acriflavine Irrigation Treatment of Gonorrhea. L. T. Mann, New York.—p. 144.
Behavior of Blood Cells Under Varying Conditions. B. Lemchen, Chicago.—p. 145.
*Infestation of Herd of Swine by Hydatids. A. A. Radcliffe, Waukegan, Ill.—p. 146.

Amnesia.—Gilbert relates the case of a woman, aged about 46 who found herself in another town than her own with her conscious memory a blank. After about one month she consulted the author. The patient refused to be hypnotized for fear that she might be awakened to something unpleasant, a feeling which was almost an obsession. Finally, however, by means of psycho-analysis, Gilbert succeeded in getting a return of memory for many facts that proved to be real experiences in the patient's former life. The author states that this proves to him, at least, that we only forget the things that we want to forget, and that amnesia is the result of autosuggestation, consciously or subconsciously induced, by which conscious data are crowded out of the conscious into the subconscious. It is to be classed as a self-induced negative hallucination. These inhibited data lie dormant until some appropriate association or experience calls them back into proper connection with the conscious life where they belong. In the case cited, the subconscious would usually yield the information reflexly and automatically and the conscious would then verify the information through the original information had been given by some other separate individual.

Acriflavine Treatment of Gonorrhea.—The technic employed by Mann is that of Watson who uses a 1:4,000 solution of acriflavine in physiologic sodium chlorid solution, at body temperature, once daily. He regards this as being the best remedy for the irrigation treatment of gonorrhea and analyzes thirty-six cases, carefully controlled, in which he made use of the treatment.

Hydatid Infection of Swine from Human Being.—In the cases cited by Radcliffe, a man who was infested with mediocanellata was the source of the infestation of the pigs. He had them in his care and frequently defecated around the feeding pens.

Michigan State Medical Society Journal, Grand Rapids

January, 1921, **20**, No. 1

Carcinoma of Rectum and Sigmoid. R. R. Smith, Grand Rapids.—p. 1.
Surgical and Nonsurgical Aspects of Chronic Gastric and Duodenal Ulcers. G. B. Eusterman, Rochester, Minn.—p. 3.
Pathology of Peptic Ulcer. W. C. MacCarthy, Rochester, Minn.—p. 5.
Roentgen Ray Evidence of Ulcer. P. M. Hickey, Detroit.—p. 8.
Etiology and Diagnosis of Peptic Ulcer. M. M. Portis, Chicago.—p. 11.
Acute Fibrinous Bronchitis. Report of Case. N. R. Lawhead, Detroit.—p. 14.

Minnesota Medicine, St. Paul

January, 1921, **4**, No. 1

*Cholecystectomy with Modified Drainage. C. H. Mayo, Rochester, Minn.—p. 1.
*Peritonitis and Intestinal Intubation. A. N. Collins, Duluth.—p. 9.
Repair of Hare Lip and Cleft Palate Deformity. H. P. Ritchie, St. Paul.—p. 15.
Hemorrhagic Disease of New-Born. F. C. Rodda, Minneapolis.—p. 24.
*Preoperative and Postoperative Study of Diabetic Patients with Surgical Complications. D. M. Berkman, Rochester.—p. 28.

Cholecystectomy with Modified Drainage.—Of the 1,254 patients seen at the Mayo Clinic with gallstones and cholecytitis during the last year, 339 showed changes in the pancreas so marked as to be recognized clinically. From 1907 to 1920 Mayo says they operated on 158 patients with cancer of the gallbladder. Previous to 1910 the ordinary operation was a cholecystostomy for cholecystitis with and without stones. During this time 350 cholecystectomies were performed, 3 per

cent. of which (0.82 per cent. of the total number of operations on the gallbladder and duct) were for cancer, cholecystectomy being performed only in cases of advanced disease. Increased ability to diagnose cholecystitis and gallstones has led to a greatly increased number of early operations. From January, 1907, to August, 1920, 11,429 operations on the gallbladder were performed; of these 7,688 were cholecystectomies, but since the percentage of early operations before gross disease develops has increased greatly since 1910 the percentage of cancer found has been greatly reduced. Cholecystostomy is now reserved for the special case in which advanced age or complications make it desirable; 3,346 cholecystostomies have been performed at the clinic from January, 1907, to August, 1920. Cholecystectomy with local peritoneal drainage has been the rule, but it is now used for gross infections, without biliary drainage, although biliary drainage is still provided for in most cases of common duct disease, closure being made in suitable cases without biliary drainage but with peritoneal drainage.

Peritonitis and Intestinal Intubation.—A method of intestinal intubation through the appendix stump is described by Collins. By this method it is possible to intubate that part of the intestine, the ileum, which is first involved in the paralytic process. The method is best adapted to the early cases. By perforating the sides of the intubation tube a number of vents are provided for both small and large intestine. By inserting the tube through the ileocecal valve, spasm of that valve is overcome. If reflux of cecal contents into the ileum is a factor, the tube provides an outlet. Gaseous distention and fecal statis have also, by means of the perforated tube, an outlet. By means of the catheter within the tube it is possible to irrigate the small intestine or to administer medicaments or nourishment. Through the intubation tube it may also be possible, by lavage of the intestine, to make such experimental studies on peritonitis cases, during treatment, as may be necessary to establish more definitely the specific nature of intestinal toxins.

Operations on Diabetics.—One hundred and fifty-nine operations of all kinds have been performed in the Mayo Clinic on diabetic patients with a mortality of 5.03 per cent. Ether was administered 104 times, with a mortality of 5.76 per cent. Berkman states that the mortality in operations on infected tissues was twice as great as on uninfected tissue, and, judging from the literature, this is the usual ratio. Sixty-eight per cent. of the seventy-six patients operated on, who have been heard from have obtained relief from various crippling, health-destroying and life-menacing conditions from which they were suffering aside from their diabetes.

Missouri State Medical Association Journal, St. Louis

January, 1921, **18**, No. 1

Plea for Establishment of State General Hospital Articulated with County General and Other Hospitals, and Completion of Medical Education in University of Missouri. F. G. Nifong, Columbia.—p. 1.
*Lucilia Caesar Epizootic. E. W. Saunders, T. W. White, St. Louis, and S. Wisdom, Bismark, Okla.—p. 4.
*A Sign of Value in Early Phthisis. S. Simon, St. Louis.—p. 11.
Bronchial Asthma. C. H. Evermann, St. Louis.—p. 12.
Child Hygiene in Missouri. C. P. Knight, Jefferson City.—p. 16.
Aneurysm of Innominate Artery; Report of Case. E. A. Dulin, Nevada.—p. 19.

Lucilia Caesar and Poliomyelitis.—Saunders states emphatically that Wickman's theory of human transmission of poliomyelitis—that the disease follows the lines of human travel—is entirely misleading, unless the further fact be stated, "during the insect season only." The utter failure to stem the tide of the epidemic in New York by acting on the theory of human transmission, while the streets were swarming with infected *L. Caesar* issuing from its breeding place in the subway then under construction, should have convinced any unprejudiced mind that Wickman's theory was wrong. Seeing that simian poliomyelitis is a strictly inoculable disease, and that human poliomyelitis in its epidemiology contradicts every known law of ochletic transmission, it seems to Saunders imperative to accept the *L. Caesar* epizootic as the logical etiology. It is useless to bury carcasses in the hope of protecting against *L. Caesar*. If already blown the maggots will work their way to the surface through six feet of earth. If not blown, the fly will deposit its eggs on the surface, and the maggots will reach the carcass. Likewise, wire screens are no protection to food against the ova deposited on the outside. Of all known insects *L. Caesar* is most readily trapped. Its predilection for boiled or bruised cabbage is so great that it is called the "cabbage fly" in some localities. After all carrion and garbage is disposed of, every fly within a mile to leeward can be brought to the trap by boiled cabbage. All carcasses and garbage should be burned or treated with larvicide. In the absence of *L. Caesar*, poliomiolocally no more to be dreaded than is malaria without anopheles, or yellow fever without stegomyia. Theoretically inoculation might take place through the bite of blood sucking insects, but the virus has never been found in human blood, this mode of transmission is in the highest degree improbable. In monkey's blood the virus has been found, and the disease actually transmitted through the bite of stomoxys.

Diagnostic Sign in Early Phthisis.—Simon says that when he examines a chest for possible phthisis, he pays particular attention to the heart, and especially to the pulmonary second sound which, in the absence of any organic right centricular hypertrophy, is of inestimable value, in that it is usually accentuated in early phthisis.

Nebraska State Medical Journal, Norfolk

January, 1921, **6**, No. 1

Revision of Ununited or Malunited Fractures. H. W. Orr, Lincoln.—p. 1.
Epidemic Encephalitis. W. Heagey, Omaha.—p. 3.
Urinary Infections in Early Life. N. Jones, Omaha.—p. 9.
Roentgen-Ray Diagnosis of Diseases of Alimentary Canal. A. M. Pfeffer.—p. 11.
Treatment of Trachoma. J. M. Walsh, Rapid City, S. D.—p. 19.
Some Commonly Overlooked Foci of Infection. J. G. Parsons, Sioux Falls.—p. 20.
Postoperative Complications of Acute Mastoiditis. R. A. Peterson, Sioux Falls.—p. 23.

New York Medical Journal

Jan. 22, 1921, **113**, No. 4

Modern Commentaries on Hippocrates. J. Wright, Pleasantville, N. Y.—p. 133.
*Modern Treatment of Acne. W. J. Highman, New York.—p. 137.
Backache Due to Neurologic Conditions. C. Rosenbeck, New York.—p. 138.
Gynecologic Backache. E. A. Bullard, New York.—p. 142.
Scarlatina. H. I. Goldstein, Camden, N. J.—p. 148.
Seborrhea of Scalp. C. G. Cumston, Geneva, Switzerland.
*Latent Pulmonary Tuberculosis in Its Various Disguises. M. S. Cohen, Philadelphia.—p. 144.
*Tabes Mesenterica Following Influenza. R. J. Melman, Philadelphia.—p. 147.
Transient Heterophoria and Strabismus in Neurasthenics. G. E. Barnes, Herkimer, N. Y.—p. 148.

Treatment of Acne.—The indications for treatment Highman says are (1) the prevention of comedone formation, and (2) the control of the underlying factors where this is possible. Incidental indications are the treatment of the scalp and the expression of the pustules and the comedones. The general treatment consists of regulating the diet by cutting down the starch and sugar intake and by promoting intestinal function. To prevent comedone formation, the use of the roentgen ray is recommended. No local treatment is necessary at home. Vaccines, in Highman's experience, promise nothing. The major indication is the treatment of the skin. One Holzknecht unit applied to the face weekly for from ten to sixteen exposures will cure the average case of acne, and in case of recurrences, two or three exposures will prove effective.

Latent Pulmonary Tuberculosis.—Cohen analyzes seventy-cases in which there was pulmonary consolidation without cough. He records the various symptoms and phenomena observed without endeavoring to explain them. They are grouped under seven heads: Nervous symptoms; autonomic phenomena; gastro-intestinal disturbances; pains; menstrual and other pelvic disorders; skin eruptions, and general or systemic symptoms. He suggests the possibility that they are due to excess of internal secretions the result of stimulation of the endocrine glands by the tuberculous poison and are evidences of a defense reaction. This excessive excretion may continue even after the disease has been checked, hence the symptoms may likewise be manifested.

Tabes Mesenterica Following Influenza.—Melman reports a typical case of influenza occurring in a boy, aged 7 years. On the eighth day the boy had a severe pleuritic pain in the left side, accompanied by a rise in temperature. There was also enlargement of the liver and the spleen. Careful physical and laboratory examination led to the suspicion that tuberculosis was present somewhere. Increasing abdominal distension, palpable inguinal and mesenteric glands led to the diagnosis of tabes mesenterica. The child's condition finally became so alarming that a laparotomy was performed. The mesentery was covered with enlarged glands tuberculous in character and a small amount of fluid was found in the peritoneal cavity. The child made an uneventful recovery.

Ohio State Medical Journal, Columbus

Jan. 1, 1921, **17**, No. 1

Surgical Aspect of Chronic Lesions of Pylorus and Adjacent Viscera. F. G. Leonard, Cleveland.—p. 5.
Terminal Complications of Chronic Indurated Ulcer of Stomach and Duodenum. J. A. Sherbondy, Youngstown, Ohio.—p. 8.
*Scabies, a Possible Menace: Its Recognition and Treatment. J. W. Miller, Cincinnati.—p. 1.
*Treatment of Cancers of Skin. H. N. Cole, Cleveland.—p. 14.
Acute Mastoiditis Following Influenza: Report of Cases. W. E. Murphy, Cincinnati.—p. 18.
Treatment of Tuberculosis of Knee Joint. J. J. Kurlander, Cleveland.—p. 20.
Plea for Better Obstetrics. L. R. Fast, Paulding, Ohio.—p. 23.
Care of Pregnant Woman. W. D. Fullerton, Cleveland.—p. 25.
Use of Local Anesthesia in Major Surgery. D. Foldes, Cleveland.—p. 29.

Treatment of Scabies.—Miller endorses the rubbing cure. Without a preliminary bath the patient is given an ointment containing 5 per cent. balsam of Peru and 10 per cent. of sulphur. A minimum of fifteen minutes is taken for the rubbing of each patient. The ointment is rubbed in thoroughly on every portion of the entire cutaneous surface, not even the smallest part is missed, except the face and scalp. The rubbing is repeated for the next three days. A cotton union suit is worn in order to retain the ointment, is not removed at bedtime. Sometimes it is necessary to cover the hands and feet, especially in very young children, and this is done, of course, by wearing suitable gloves and stockings. Especial attention is given to the genitals, buttocks and breasts while rubbing. Great care must be exercised while rubbing not to cause a sulphur dermatitis. On the fifth day a warm bath with plenty of soap is ordered, together with a change of clothes. All articles of clothing must be disinfected carefully. Occasionally it may be necessary to repeat the course of sulphur rubs, or a 2 per cent. beta naphthal ointment may be substituted.

Treatment of Skin Cancer.—In a series of 202 cases of cancers, most of them on the face, Cole reports results from the use of radium, roentgen ray, electrolysis, electrocoagulation and operation, according to the case. He absolutely advises against the use of caustics, pastes and carbon dioxid snow. He deprecates the general use of small amounts of radium and of roentgen-ray machines by experienced physicians.

Pennsylvania Medical Journal, Harrisburg

January, 1921, **24**, No. 4

Sinus Disease and Ocular Involvement. G. B. Jobson, Franklin.—p. 205.
School Myopia; Its Prevention, Importance of Early Recognition, and Treatment. W. W. Blair and J. G. Linn, Pittsburgh.—p. 206.
Physician and Public Schools. T. E. Finegan, Harrisburg.—p. 210.
Treatment of Malignant Disease; Special Reference to Radium in Needles. W. L. Clark, Philadelphia.—p. 214.
Health Insurance—A Challenge to Physicians. F. R. Green, Chicago.—p. 224.
Endocrines in Gastric Disease. T. G. Schnabel, Philadelphia.—p. 229.
Analysis of Chronic Gastritis. M. E. Rehfuss, Philadelphia.—p. 233.
One Thousand Hysterectomies. H. J. Donaldson, Williamsport.—p. 236.
Value of Subtotal Hysterectomy in Treatment of Fibromyoma of Uterus. F. Hurst, Philadelphia.
General Symptomatology of Mental Diseases. H. V. Pike, Danville.—p. 241.
Medical Practice and Medical Education in Its Relationship to Compulsory Health Insurance. C. Bartlett, Philadelphia.—p. 245.
Summary of the Reasons Why the Medical Profession is Opposed to Compulsory Health Insurance. F. C. Hammond, Philadelphia.—p. 248.
Cauliflower Cancer of the Cervix in a Woman of Twenty. W. E. Darnell, Atlantic City, N. J.—p. 250.

Virginia Medical Monthly, Richmond

December, 1920, **47**, No. 9

Cooperation of Physician in Tuberculosis Fight. R. K. Flannagan, Richmond.—p. 401.
Coordination of Antituberculosis Agencies. W. C. Klotz, Charlottesville.—p. 403.
Mouth Breathing. E. E. Watson, Salem.—p. 407.
Curbing Tuberculosis. S. Harnsberger, Catlett.—p. 408.
Roentgen Ray in Pulmonary Tuberculosis. J. T. McKinney, Roanoke.—p. 410.
Interpretation of Signs and Symptoms in Pulmonary Tuberculosis. H. G. Carter, Burkeville.—p. 412.
Local Tuberculosis Clinic. C. R. Grandy, Norfolk.—p. 414.
Inconstant Blood Pressure. G. Nelson, Richmond.—p. 418.
Biology and Modern Medicine. C. M. Blackford, Staunton.—p. 422.
Venereal Disease Problem. W. D. Kendig, Kenbridge.—p. 428.
Control of Venereal Diseases. E. L. Kendig, Victoria.—p. 431.
Idiopathic and Traumatic Ileus. A. G. Payne, Greenville, Miss.—p. 434.
Public and Its Medical Society. D. L. Harrell, Suffolk.—p. 437.
Rental Lithiasis. A. I. Dodson, Richmond.—p. 439.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

December, 1920, **25**, No. 7

*Red Cell Blood Content of Those Handling Radium for Therapeutic Purposes. J. C. Mottram.—p. 194.
*Histologic Changes in the Bone Marrow of Rats Exposed to Gamma Radiations from Radium. J. C. Mottram.—p. 197.
Roentgen-Ray Therapy. C. T. Holland.—p. 199.
*Suggested New Method of Measuring Roentgen-Ray Dosage. C. E. S. Phillips.—p. 215.
Oral Sepsis and Its Radiographic Diagnosis. J. H. Woodroffe.—p. 217.

Red Cell Blood Content of Radium Workers.—The red cell content of individuals working with radium has been investigated by Mottram. In many cases a diminution in the number of red cells, with a high color index, was observed. In three cases a profound anemia was found, and was followed by death after an illness of a few months. Mottram urges that the workers with radium should be given every practicable and reasonable protection.

Bone Marrow Changes Caused by Gamma Rays.—The results obtained by Mottram are in keeping with and explain the blood changes found in radium workers. The low polymorphonuclear blood content commonly found, and the anemia of an aplastic type affecting the much exposed workers, pointed to an interference with the output of blood cells from the bone marrow.

New Method of Measuring Roentgen-Ray Dosage.—The method proposed by Phillips is based on the fact that a gas becomes a conductor of electricity when traversed by roentgen rays, and its essential feature consists in the use of a thermionic valve. This plan enables the small variations of current in an ionization chamber to be transformed up to give corresponding variations of a much larger current in a separate circuit at low tension, which can be read on an ordinary milliamperemeter placed at any reasonable distance from the roentgen-ray apparatus.

Brain, London

November, 1920, **43**, No. 3

*Symptom Complexes of Lethargic Encephalitis, with Special Reference to Involuntary Muscular Contractions. F. M. R. Walshe.—p. 197.
*Decerebrate Rigidity in Man and Occurrence of Tonic Fits. S. A. K. Wilson.—p. 220.
*Relation of Form of Knee Jerk and Patellar Clonus to Muscle Tonus. H. Viets.—p. 269.
Alterations of the Golgi Apparatus in Nerve Cells. W. G. Penfield.—p. 290.

Classification of Lethargic Encephalitis.—The protean manifestations and the remarkable clinical diversity of lethargic encephalitis are discussed by Walsche, and it is suggested that the numerous schemes of classification and description adopted, though inevitable in the early and growing stages of knowledge of so polymorphic a disease, are in fact tending to confuse rather than to lend precision to our conceptions of this malady, for practically every case presents, either simultaneously or at some phase of its course, the features of several clinical "types." The example of "myoclonic encephalitis" is discussed as demonstrating the misleading results of a purely symptomatic basis of classification

and description. A natural grouping of the symptoms of any toxic infective disease of the nervous system is given, and it is suggested that description, and as far as possible classification, on an anatomic basis—that is, using the focal nervous signs for the purpose of defining types—would obviate much of the confusion at present to be found in the literature, and would at least ensure a uniform terminology in descriptions of the disease.

Decerebrate Rigidity in Man and Occurrence of Tonic Fits.—The type of case described by Wilson is one in which there is evidence of withdrawal of cortical control in the form of unconsciousness or semiconsciousness, the result commonly of cerebral hemorrhage—submeningeal or intraventricular, or both—or of meningeal inflammation, or from the effect of certain intracranial tumors; also, for that matter, of hysteria. Coupled with his impairment of consciousness has been the appearance of tonic rigidity of trunk and limbs, minutely resembling experimental decerebrate rigidity, to which frequent exacerbations in the form of tonic or postural fits, accentuating and exaggerating the background of tonic posture, are superadded.

Relation of Form of Knee Jerk and Patellar Clonus to Muscle Tonus.—Viets records the results of his experiments on cats, both spinal and decerebrate, with the anterior crural-vasticrureus nerve-muscle preparation isolated in situ, and the movement of the knee joint recorded graphically.

British Medical Journal, London

Jan. 1, 1921, **1**, No. 3131

*Diagnostic Significance of Abdominal Pain in Childhood. R. Hutchison.—p. 1.
*Epilepsy a Symptom, Not a Disease. J. Taylor.—p. 4.
*Hour-Glass Stomach. C. T. Holland.—p. 6.
*Massage of Heart and Resuscitation. J. A. Gunn.—p. 9.
Practical Gains of Clinical Cardiology Since 1900. W. Gordon.—p. 12.

Abdominal Pain in Childhood.—The possibilities to be considered when confronted with a case of severe abdominal pain in childhood, Hutchison says, are acute indigestion, appendicitis and some form of acute intestinal obstruction of which that due to intussusception is especially frequent. Among the rarer causes are abdominal or Henoch's purpura and renal colic. In children, chronic or recurring abdominal pain usually has its seat of origin in the intestine. Ordinary indigestion may cause some pain, probably from distension of the stomach with gas, but it is rarely severe in degree—rather a mere discomfort—and its definite relation to meals and its relief after the belching up of wind will usually make the nature of the case plain. The intestinal cases are far more common. They are due to: (*a*) ordinary colic; (*b*) umbilical colic; (*c*) enterospasm, and (*d*) chronic obstruction.

Epilepsy a Symptom, Not a Disease.—Taylor is fully convinced that epilepsy should not be regarded as a disease but as a symptom. The convulsions of what is called epilepsy are not in their manifestations to be distinguished from the convulsions of uremia or from those occurring with heart-block and in other conditions. It is only the discovery of associated conditions which reveals the true nature of the convulsions, and the more one sees of these convulsions in what is called ordinary epilepsy the more is one driven to the acceptance of Hughlings Jackson's dictum that "there is no such thing as a case of ordinary epilepsy." Each case of recurring convulsion must be studied by itself. The origin of the convulsions, their nature, the march of the discharge, and especially any premonition or "warning," must be most carefully considered. By such study the cause of the convulsions is most likely to be revealed, and if this is disclosed, treatment, either surgical or medical, may be undertaken with some hope of success.

Hour-Glass Stomach.—Among the 151 cases of hour-glass constriction from old ulcer seen by Holland, 128 occurred in females. Of the males nine presented an hour-glass appearance, either clinically, under the roentgen rays, or at operation, or by all three methods, but they were in reality cases of definite malignant disease. Five were cases in which a gastro-enterostomy had been done some years previously, and these appeared to be due to the late effects of the gastro-enterostomy. One followed on a very severe abdominal crush. Therefore only eight out of the twenty-three males can be classified as typical hour-glass stomach caused by *simple ulcer*—and of these five were proved by a later operation.

Massage of Heart and Resuscitation.—The following directions are laid down by Gunn for resuscitation in cardiac arrest in man or animals, whether from chloroform anesthesia or from any other condition in which cardiac arrest is "accidental." If the heart has stopped, artificial respiration should be resorted to immediately by the usual methods. If, at the end of three or four minutes, no pulse can be felt, and especially if no heart beats can be heard on auscultation, epinephrin should be injected into an external jugular vein, by an assistant if available; if no assistant be available, the gain from epinephrin more than compensates for the loss of time, provided the materials are at hand. In the meantime, or subsequently, as the case may be, the abdomen should be opened high up, one hand inserted in the opening, passed up over the left lobe of the liver, and the heart felt for above the diaphragm. The heart should then be massaged intermittently. As soon as spontaneous beats of the heart, however feeble, are felt massage should be interrupted for several beats to allow the contractions to establish themselves; otherwise, continuous massage may abolish them again. The heart should then be massaged again for a short time, when the beats will probably improve. When the heart has begun beating it is safer to use too little than too much massage. The hand should not be removed from the abdomen till the heart is beating well. When the heart continues to beat regularly and strongly an intravenous injection of atropin should be given. Artificial respiration must be kept up continuously, also after the heart begins beating. After five minutes it may be interrupted to see if natural respiration will begin, but not for long. No harm is done by keeping up artificial respiration, even if it inhibits the natural respirations whereas, on the other hand, it is not safe to interrupt artificial respiration very long, if natural respiration does not commence. If it be found that positive artificial respiration can be used in man by, for example, a Brodie's pump of larger size than that used in the physiological laboratory, the problem of resuscitation will be greatly facilitated. Natural respiration may be expected to begin in five to ten minutes after the heart begins to beat again, but may be delayed for thirty minutes. During the manipulations, and afterward if these procedures be successful, care must be taken to maintain the body temperature.

Journal of Laryngology, Rhinology, and Otology, London

December, 1920, **35**, No. 12

Assessment of Aural Disability Resulting from Military Service. A. Ryland.—p. 354.
Spinose Ear Tick (Ornithodorus Megnini Duges) in Human Ear in South Africa. R. Broom.—p. 362.

Kitasato Archives of Experimental Medicine, Tokyo

October, 1920, **4**, No. 1

*Leukocytes in Influenza in Special Reference to Their Etiologic Significance. S. Yabe.—p. 1.
Serum Fastness of Spirochete of Recurrent Fever. H. Toyoda.—p. 40.

Leukocytes in Influenza; Their Etiologic Significance.—Yabe states that of all the different species of bacteria isolated from influenzal cases, *B. influenzae* is the only one that produces the same blood change as is found in the influenza patient. By a quantity of influenzal endotoxin, more or less perceptible decrease of any kind of leukocytes may be produced. With the endotoxins of other species of bacteria, other than *B. influenzae*, an increase of the leukocyte count has been observed to take place independently of the species of the experimental animals. Hence, Yabe believes that from the results obtained by him experimentally, the clinically observed phenomena of the decrease of leukocytes in influenzal cases, may be most rationally considered to be the results of the toxic action of *B. influenzae*.

Lancet, London

Dec. 25, 1920, **2**, No. 26

Future of Poor-Law Infirmary. C. M. Wilson.—p. 1287.
Poor-Law Infirmaries as Municipal Hospitals. C. Buttar.—p. 1290.
Future of Poor-Law Infirmary from Point of View of General Hospital. E. W. Morris.—p. 1292.
March of Surgery. W. I. de C. Wheeler.—p. 1294.

*Treatment of Large Defects in Peripheral Nerve Injuries. J. S. B. Stopford.—p. 1296.
*Theory of Cancer. T. C. Clarke.—p. 1298.
Blood Pressure During Intravenous Injection of Quinin. U. N. Bramachari.—p. 1301.
Case of Complete Absence of Cerebellum. D. P. Priestley.—p. 1302.
Addendum to Value and Interpretation of Some Physical Measurements. C. B. Heald and B. Thomson.—p. 1302.
Case of Shaving Brush Infection with Anthrax. D. C. L. Fitzwilliams.—p. 1304.
Case of Orbital Cellulitis. R. S. McClelland.—p. 1304.
Case of Epithelioma of Penis Following Incomplete Circumcision. C. H. Whiteford.—p. 1304.

Treatment of Large Defects in Nerves.—Only those cases were considered by Stopford in which it was impossible to bring the ends of divided nerves together both by modification of posture and freeing of both segments. The methods under observation were: (1) plastic operations on the nerve in which a flap is used from the proximal, distal, or both ends; (2) incomplete nerve crossing, which consists of the lateral implantation of the distal, or both, segments of the injured nerve into a neighboring intact nerve trunk, and (3) "bridging" by autogenous or heterogeneous nervegrafts, a fascial sheath, or a vein. No clinical evidence of regeneration was found after the flap operation (three patients), incomplete nerve crossing (seven patients), or bridging (thirty patients). Definite and satisfactory regeneration occurred after transplantation of the ulnar in front of the internal condyle of the humerus in all the twenty-nine patients examined. It seems probable that both the motor and sensory recovery will be more complete after this maneuver than in the series of simple end-to-end suture without displacement. Normal recovery, as after end-to-end suture, was seen in five out of six cases in which the two-stage operation was practiced. Stopford believes that defects may be treated with a reasonable prospect of success by the two-stage operation, or anterior displacement in the case of the ulnar, and consequently such futile procedures as the flap operation, lateral implantation, or bridging need not be considered. The first stage consists of drawing together as closely as possible after freeing the two ends of the nerve by through-and-through sutures, with the limb so fixed that the maximum relaxation is maintained. After a sufficient period has elapsed to permit stretching of the nerve and all relaxation by posture to be gradually removed, the second stage is undertaken, which consists of reexploration of the nerve, refreshing of the ends, and accurate end-to-end suture. The author's experience with this method has been good.

Theory of Cancer.—While agreeing with some of Paine's views, Clarke endeavors to argue that the degeneration of the cell is not directly caused by inflammation or other form of irritation, but is the result of an effort to respond to the destructive effect of inflammation prolonged beyond the regenerative powers of the tissue; such power being not unlimited, and varying in different tissues according to their "normal" necessities, and varying in different individuals.

Jan. 1, 1921, **1**, No. 1

Recent Advances in Science. F. G. Hopkins.—p. 1.
Psychology of Anesthesia. D. W. Buxton.—p. 7.
Oral Sepsis. W. B. Watson.—p. 11.
*Experiments with Flocculation Test (Sachs-Georgi) for Syphilis. W. R. Logan.—p. 14.
*Case of Enteric Fever Due to B. Enteritidis of Gaertner. A. B. Rosher and G. S. Wilson.—p. 16.
Pseudo Coxalgia: Osteochondritis Deformans Juvenilis. H. A. T. Fairbank.—p. 20.
*Spirochetes in Etiology of Certain Paralyses. G. Schuster.—p. 21.
Use of Citrated Mediums. H. C. Brown.—p. 22.

Sachs-Georgi Test for Syphilis.—Results can usually be obtained by the flocculation test, and in Logan's hands the most accurate and most easily read were obtained when turbid emulsions were used rather than the opalescent solutions advocated by Sachs and Georgi, and when a considerably longer period of incubation was made use of than their standard time of from eighteen to twenty hours. On the other hand, a series of false positives occurred when these thick emulsions were being used, and it is possible that the increase in the surface of the suspended lipoids carries with its advantages this particular danger. Logan believes, however, that on this occasion the cleaning of the glassware had been insufficient. When opalescent solutions are used, the readings seem to be too difficult and too liable to cause the introduction of a personal element, and for this reason it is desirable that the comparatively gross flocculation seen with the thicker emulsions should be aimed at in standardizing the test. Until the factors which may cause false reactions are definitely recognized and can be controlled, Logan says the test should not be used to supplant the Wassermann reaction, although it may profitably be used as an additional control to that test. Even when used in this way at least half a dozen negative and half a dozen positive controls should always be included. Further experiments into the nature of the reaction are in progress.

Enteric Fever Caused by Gaertner's Bacillus.—The chief features of the case cited by Rosher and Wilson were: (1) a fever lasting altogether twenty-four days and running a course simulating closely that of typhoid; (2) a very definite lowering of the pulse-temperature ratio, particularly noticeable when the pyrexia was at its height; (3) a moderate degree of toxemia during the second week; (4) absence of a rash; and (5) no evidence of enlargement of the spleen. A blood culture taken on the twelfth day of disease was negative, a point on which too much stress cannot be laid, as by this time agglutinins had appeared in the blood, and as it seems possible that these may lead to the clumping of the bacilli in vivo and their subsequent removal from the blood by filtration in such organs as the liver, spleen, and kidneys, a positive result is hardly to be expected at this stage of the disease. The examination of the feces and urine was likewise not undertaken till comparatively late in the disease—in fact, till the very day on which the temperature began to fall—so that here again negative findings are not of any great value. On the other hand, the characteristic agglutination curve, rising rapidly during the third week, falling sharply with the complete establishment of convalescence, and then coming down more slowly and remaining well above normal for at least seven weeks is a point which the authors consider to be of the greatest importance in the diagnosis of the disease.

Spirochetes in Etiology of Certain Paralyses.—Schuster claims that large quantities of spirochetes are to be found in the central nervous system in cases of general paralysis of the insane, even when the disease runs a simple course without paroxysm. The main colonies of the spirochetes settle in the lowest strata of the cortex, and while increasing in number there they may spread over other areas of the cortex; while alterations of the tissue of the cortex may be extensive the alterations of the medullary sheath are most obvious just on the edge of the cortex and medullary sheath. Schuster was able to show fine spirochetes in the lower layers of the cortex in a case of disseminated sclerosis. There seems to be some connection between disseminated sclerosis and alterations of medullary sheath, because in both cases the result caused by spirochetes is plexiform disintegration of the medullary sheath, of which the site of election is the boundary of the corticular and medullary substance.

Medical Journal of Australia, Sydney

Nov. 27, 1920, **2**, No. 22

Lumbar Puncture and Meningitis. R. Webster.—p. 487.

Lumbar Puncture and Meningitis.—Webster discusses the part played by lumbar puncture in precipitating meningitis in animals rendered artificially septicemic, and makes a plea for the conservative use of diagnostic lumbar puncture.

Dec. 4, 1920, **2**, No. 23

Treatment of Dental Abscess. A. R. Menzies.—p. 509.
Some Common Affections of Ear, Nose and Throat. T. L. Anderson.—p. 513.

Dec. 18, 1920, **2**, No. 25

Ankylosis of Metacarpophalangeal Joints. C. G. Shaw.—p. 549.
*Renal Efficiency and Hyperglycemia. L. A. I. Maxwell.—p. 551.

Renal Efficiency and Hyperglycemia.—Renal inefficiency was present in 58 per cent. of the diabetics examined by Maxwell. In cases of hyperglycemia, he says, blood sugar determination should only be interpreted in the light of renal efficiency examinations. In about four-fifth of the diabetics investigated concentration of the blood had occurred, as shown by increased total solids and raised refractive index. Lipemia was not a marked feature of the series of cases described.

South African Medical Record, Cape Town

Dec. 11, 1920, **18**, No. 23

Public Health Problems, as Viewed from South African Standpoint. L. G. Haydon.—p. 449.

Bulletin de l'Académie de Médecine, Paris

Dec. 14, 1920, **84**, No. 39

*Contagion of Lethargic Encephalitis. G. Guillain and P. Lechelle.—p. 321.
*Survival After Amputation of Breast for Cancer. E. Potherat.—p. 326.
*Amputation of Thigh for Gangrene of Leg. F. Lejars.—p. 327.
Prophylaxis of Mushroom Poisoning. L. Azoulay.—p. 329.
Psychoneuroses a Perversion of Logical Thinking. A. Deschamps.—p. 331.

Contagion of Lethargic Encephalitis.—A man died from lethargic encephalitis in a city in the interior of France in January, 1920. His son, a young physician living in Paris, did not go to settle up his father's affairs until August. Then he occupied his father's room, wore his father's underclothes and other garments, living thus for two weeks with mother and uncle who had been in the home during the father's illness. On his return to Paris he developed a typical case of lethargic encephalitis from fifteen to thirty days after infection, if this occurred from the paternal fomites.

Survival After Mammectomy for Cancer.—Potherat reports eight cases of removal of the breast for cancer with recurrence nine, ten, eleven, eighteen or twenty-four years after the operation. In three of them a recurrence was excised in less than two years, but the women died from another cause eighteen, nineteen and twenty-seven years later.

Amputation of Thigh for Gangrene of Leg.—Lejars urges high amputation from the first when gangrene below the knee calls for amputation, the cases he reports demonstrating pathologic conditions in the arteries to a much higher point than the clinical aspect suggested.

Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 19, 1920, **44**, No. 35

Dwarf Growth and Infantilism of Thyroid Origin. P. F. Armand-Delille.—p. 1392.
Deformity of Pulmonary Artery. C. Laubry and M. Parvu.—p. 1395.
*Gonococcus Arthritis. H. Dufour and M. Debray.—p. 1399.
*Latent Liver and Kidney Disease with Gastric Ulcer. Le Noir, C. Richet, Jr., and A. Jacquelin.—p. 1402.
Sulphates of Cerium Metals in Treatment of Tuberculosis. H. Grenet, S. Bloch and H. Dronin.—p. 1406.
*Peritoneal Pneumoserosa. P. E. Weil and J. Loiseleur.—p. 1415.

Autotherapy of Gonococcus Arthritis.—Dufour and Debray announce that the fluid from a gonococcus process in a joint answers all the requirements for an efficient and harmless autogenous vaccine when injected subcutaneously. There is no need to heat or sterilize the fluid; they injected it under the skin of the thigh, and state that the general symptoms, and the general and localized pain rapidly subsided, and the temperature gradually declined in their three cases. The effect on the urethral and vaginal processes could not be determined as local measures had been applied here as usual.

Liver and Kidney Disease with Gastric Ulcer.—Le Noir and his co-workers call attention to the relative frequency of liver and kidney disease with chronic gastric ulcer, although their share in the clinical picture is so overshadowed by that of the stomach that the hepatonephritis discovered at necropsy is a surprise. In five out of a recent series of seventeen operative cases of gastric ulcer, the patients died, and the discovery at necropsy of these severe kidney and liver lesions first explained the fatality. In two of these fatal cases the uncontrollable vomiting had been severer than they had ever noted in simply ulcer cases. In the third, the sclerofatty degeneration of the liver was probably a factor in the profuse gastro-intestinal hemorrhages which had dominated the scene. These hemorrhages could not be attributed to the shriveled ulcer nor to ulceration of a vessel. Nothing but deficient liver functioning impairing the coagulating power of the blood could be suggested to explain the hemorrhagic tendency. In three of the cases both liver and kidneys seemed to be pathologic, and in one the kidney alone. The blood pressure was not high, and there was rarely albuminuria or edema. But the condition was revealed by uremia of 0.5 to 0.6 gm. or higher, and exaggeration of the Ambard constant. The coagulation time was prolonged, and tests for alimentary glycosuria confirmed the insufficiency of the liver. Under such conditions, an operation on the stomach, especially if chloroform is used, fans the pathologic elements into a flame. Death occurred in their cases the third, fourth, up to the eleventh day, and it is probable that certain fatalities ascribed to shock in the past were due to this insufficiency of the liver or kidneys or both.

Pneumoperitoneum.—Weil and Loiseleur inject air or nitrogen in cases of ascites and other diseases of the peritoneum, and analyze the radioscopic findings in these pathologic conditions.

Journal de Médecine de Bordeaux

Nov. 10, 1920, **91**, No. 21

*Scoliosis in Adolescents. J. Gourdon.—p. 563.

Treatment of Scoliosis in Adolescents.—Gourdon concludes his study of this subject by saying that to date nothing can be depended on to cure scoliosis in adolescents except the systematic and persevering application of progressive orthopedic treatment, preventing further development of deformity, overcorrecting the lateral displacements of the spine and of the ribs, modifying the defective statics of the trunk, and facilitating the function of the intrathoracic organs. The apparatus with which he seeks to accomplish all this has several broad bands passed around the body at different heights, each fastened to a spring a few feet away on one or the other side, the row of springs fastened to an iron standard. The bands permit overcorrection in any direction and at any height. The article is illustrated.

Paris Médical, Paris

Dec. 4, 1920, **10**, No. 49

*Pediatrics in 1920. P. Lereboullet and G. Schreiber.—p. 401.
*Purpura in Infants. P. Nobécourt and R. Mathieu.—p. 412.
Importance of Roentgenoscopy in Diagnosis of Disease in Tracheo-bronchial Glands. Ribadeau-Dumas.—p. 419.
*Surgery for Children in 1920. Mouchet and Roederer.—p. 425.
*Growth Epiphysitis. Frœlich.—p. 430.

Children's Diseases in 1920.—Most of the works referred to in this review of recent progress in pediatrics have been summarized in THE JOURNAL as they appeared. The subcutaneous injection of milk in infants in treatment of intolerance of milk has been endorsed by the success in Demay's fourteen cases, and Rocaz' thirty-four, but the reviewers add that the method is still on trial. They comment favorably on the method of prophylaxis introduced by Nicolle and Conseil to protect other members of a family against measles when one is attacked. They use for this convalescents' serum, drawn about the sixth day after defervescence; 4 or 5 c.c. of this phenolized serum are injected subcutaneously, repeating the injection the next day if possible. This confers a brief immunity, enough to tide past the immediate danger, and they have found it effectual in typhoid, and suggest that it might be applied also in smallpox and scarlet fever.

Purpura in Infants.—Nobécourt and Mathieu encountered five cases of purpura in a recent series of 938 infants at the maternity. The most frequent cause is inherited syphilis, next in order is pneumococcus or meningococcus septicemia, but in a number of cases it is impossible to detect the cause. These are the fulminating, the acute forms, with negative bacteriologic findings. They never found syphilis responsible for purpura in older infants, and older infants do not present the hemorrhages in mucous membranes and viscera which are common in purpura of the newly born. Specific treatment and specific serotherapy must be early and intensive. Antipneumococcus serum, which has given fine results in treatment of pneumonia and pleurisy in infants, might prove useful in pneumococcus purpura.

Orthopedics and Surgery for Children.—In this annual review Mouchet and Roederer, referring to vaccine therapy of osteomyelitis, say that operative intervention should never be delayed a moment on its account, but there is no doubt that in many cases the vaccine has a favorable influence on the general condition, reducing the pain and fever and modifying the local process, and improving the secondary abscesses, rendering the pus more fluid so it can be evacuated by puncture. They reiterate their warning never to rely on

the vaccine alone. The latter is most useful in the subacute and chronic cases. The enlargement or sacralization of the fifth lumbar vertebra, which has been revealed by roentgenoscopy to be responsible for sciatica and lumbar pains in certain cases, has been thoroughly studied in 1920 in France and in Italy where it is called Bertolotti's syndrome. Some of the articles on it have been reviewed in these columns. Mouchet and Roederer add that Trèves recently demonstrated a case of Pott's disease, with hump, cured by correction in the Lannelongue frame alone, without a plaster cast. "The future alone can decide the value of the Albee method in such a grave disease as tuberculous caries of the vertebrae, with its often deceptive course."

Growth Apophysitis.—Froelich groups under this heading Schlatter's disease, Köhler's disease, juvenile arthritis deformans, trochanteritis, epiphysitis of the base of the fifth metatarsal bone, scaphoiditis, epicondylitis, etc. They are all lesions which appear at some point in the skeleton where growth is particularly active. The mild course and other features confirm, he thinks, that these lesions are an attenuated form of growth osteomyelitis. Their clinical importance lies mainly in the danger of mistaking them for a tuberculous process. There is further the danger that the subsidence of the lesion may be hailed as testimony to the "remarkable efficacy" of the treatment that had happened to be applied at the time.

Presse Médicale, Paris

Dec. 15, 1920, **28**, No. 92

*Excessive Uricacidemia in Gout and Nephrolithiasis. A. Chauffard, P. Brodin and A. Grigaut.—p. 905.
*Treatment of Extensive Burns. C. Lenormant.—p. 906.
The Nonelastic Inflatable Bag in Obstetrics. H. Vignes.—p. 907.

Excessive Uric Acid Content of the Blood.—Chauffard and his co-workers tabulate the findings in thirteen persons with gout and in twenty-one with kidney stones, listing the uric acid content, the ureosecretory constant, the cholesterin and the urea in the blood. In all, the uric acid content was decidedly above normal. In most of the subjects likewise the Ambard ureosecretory formula showed abnormal conditions in the kidneys. They explain that this hyperuricemia with gout differs from that with nephritis, as with the latter the trouble is merely from retention, while with the former it is the result of deranged metabolism. In three dogs, the uric acid content of the portal vein was much higher than that of the peripheral veins or the hepatic vein, indicating that the liver arrests the uric acid compounds. Perroncito's recent research indicates the same from another standpoint. He found that after removal of the liver the urea content of the blood dropped abruptly while the uric acid content increased. When this uricolytic function of the liver is impaired, uric acid accumulates in the blood. This special form of insufficiency of the liver, associated with an excess of cholesterin in the blood, and sometimes with an excess of bilirubin, justifies the traditional rôle that has been assigned to the liver as a factor in gout. The kidneys suffer from these incompletely transformed elements in the blood, and this sets up a secondary vicious circle, aggravating the disease and becoming one of the most important elements in the prognosis of gout and gravel. A tophus examined contained large proportions of sodium urate and of cholesterin, showing the double adulteration of the blood serum, and its connection with the local lesions. Gout and gravel are thus both traceable to a common condition, the uricolytic insufficiency of the liver cell. This has practical importance in guiding the dietary in gout and in nephrolithiasis, supervising the functioning of liver and kidneys.

Extensive Burns.—Lenormant advocates excision of the granulating surface after an extensive burn, loosening the skin and drawing it up to suture it together over the raw area. This is Morestin's method, and he describes a case in a young man to show the excellent outcome.

Dec. 18, 1920, **28**, No. 93

The Social Prophylaxis of Tuberculosis. L. Bernard.—p. 913.
*Epidemic Hiccup. J. Lhermitte.—p. 916.
Silver Salvarsan. M. Nathan.—p. 919.

Epidemic Hiccup.—See editorial, page 249.

Progrès Médical, Paris

Nov. 27, 1920, **35**, No. 48

Benzoin Test for Spinal Fluid. G. Guillain et al.—p. 518. See abstract on page 208.
Anthropologic Problems of Heredity. Manouvrier.—p. 519.
*Detection of Tendency to Squint. A Cantonnet.—p. 521.

Detection of Squint.—When the tendency to strabismus is slight, it may be difficult to recognize it. A simple device which aids in this is to have the child look you in the face as you hold a card in front of one of the child's eyes. As the card is abruptly removed, if the eye that has been covered has to move to focus on your face, this movement may be accepted as a sign of strabismus. The normal eyes focus alike, whether one is covered or not, and there is no turning of the eyeball when the card is removed. A still simpler test, that can be applied even to the youngest infant, is to hold a light, a candle or burning match, about 80 cm. from the child's eyes, on a line with your eyes. Looking into the child's eyes, the reflections of the light will be symmetrical if the eyes are normal. Otherwise, the abnormal location of the reflection in one of the eyes will show the strabismus and its type.

Revue de Médecine, Paris

May, 1920, **37**, No. 5

*Flaccid Paralysis of Hand. Pitres and Laffaille.—p. 257. Conc'n in No. 10, p. 478.
Infectious Thrombosis of Ascending Aorta. Minet and Pellissier.—p. 287.
*Acute Delirium of Emotional Origin. R. Benon.—p. 313.

Flaccid Paralysis of the Hand.—Pitres and Laffaille refer to what they call flaccid global functional paralysis of the hand, consecutive to war wounds. It developed immediately after the injury, and in all the cases described the trauma had been associated with some severe emotional stress. There was some disturbance in the circulation in the arm and also in the local heat regulation, and the lax paralysis persisted long after the injury had healed. This seems to exclude a reflex origin, and the paralysis is much more tenacious than the functional disturbances, resembling it, which can be induced by suggestion sometimes in hysterics who can be hypnotized. It is impossible to foretell how long it will last. It may subside slowly and gradually, as by a kind of reeducation, or it may yield suddenly under systematic psychotherapy. It is better not to label it hysteric or psychopathic paralysis, as this may imply a lack of good will on the part of the patient. Neither should it be labeled physiopathic or reflex paralysis, as this suggests a graver prognosis than the cases call for.

Acute Hyperthymia.—Benon suggests the term acute hyperthymia with delirium to express a mental condition in which morbid ideas are based on absurd interpretations or illusions, the whole developing from worry or passion. In one of the two cases described, the man's family was in the invaded zone, and he could get no news from them. In the other case, the teasing and jokes of the man's mates were taken seriously, especially their statement that he was to be shot next day. Both the men recovered under psychiatric treatment or being transferred to farm work, but this condition may progress to actual psychoses, neuropsychoses, or dementia. It is often curable in older persons and is curable also in the young, but less frequently. The condition must not be mistaken for dementia praecox (chronic hypothymia). It corresponds to what Magnan called *bouffée délirante*, and to what others have described as the delirium of degenerates.

Revue Médicale de la Suisse Romande, Geneva

December, 1920, **40**, No. 12

**"Cerclage" in Treatment of Fractures. A. E. Robert.—p. 781.
Fatal Mercurial Gangrenous Vaginitis. H. Jæger.—p. 796.
Granuloma of Stomach. H. Vulliet.—p. 806.
*Reflex Neurosis of Nasal Origin. M. Alikhan.—p. 813.
Primary Acute Osteomyelitis of Infant's Skull; Recovery. J. Baumgartner.—p. 816.
Hemorrhage from Rupture of Ovarian Cyst. Yersin.—p. 818.

"Cerclage" or Belting of Fractures.—Robert gives an illustrated description of the Putti-Parham method of reconstituting the shaft of a long bone after a slanting fracture. A narrow, flat strip of metal with a transverse buttonhole in the enlargement at one end is passed around the bone; the

end is drawn through the transverse buttonhole in the other end, and is then drawn tight and bent back, thus belting the fragments into a solid shaft. The same kind of a strip is sometimes used around the cover of preserve jars. It is safer, gives a better hold, and can be removed easier at need later than wires, screws or any other device for reconstruction of a fractured long bone. It also prevents interposition of muscle, which so often entails pseudarthrosis, with a V fracture in particular. The patient does not have to lie still for more than three weeks, while the shaft heals so perfectly that practically normal conditions are restored, and there is no shortening of the limb, no edema, vascular disturbance or irritation of nerves.

Reflex Neurosis Cured by Operation on the Nose.—Alikhan cured hysteric aphonia by removal of a small tumor in the nose in the first of his two cases, but he thinks any other operation might have cured the hysteric aphonia just as well. In the second case the woman of 53 had occasional attacks of sudden unconsciousness, suggesting epileptic seizures. There was always complete amnesia during these attacks, and they recurred at intervals of fifteen to twenty-five days. The patient seemed to be normal otherwise except for several polyps in the nose. These were removed with the cold cautery nearly a year ago, and there has been no further sign of the neurosis since, and the health seems to be perfect in every way. The irritation from the polyps, especially during exacerbation from any cause, sets up the reflex neurosis, probably on a basis of an inherited neuro-arthritic taint.

Pediatria, Naples

Dec. 1, 1920, **28**, No. 23

*Leukolysins in Infectious Diseases. G. Jemma.—p. 1081.
Digestive Leukocytosis in Infants. L. Auricchio.—p. 1193.
The Thymus in Infants. II. A. F. Canelli.—p. 1108.

Leukolysins in Children's Diseases.—Jemma's research confirms the statements of Maggiore and Sindoni in 1917 and 1918 in regard to the presence in blood of children with internal leishmaniasis, malaria, etc., of substances that have a destructive action on the leukocytes, especially on the polymorphonuclears. Jemma gives the details of three cases of leishmaniasis, three of typhoid, eleven of inherited syphilis and four with tuberculosis. These leukolytic substances were never found in the tuberculous nor in inherited syphilis without leukopenia; they were present in all the others tested but disappeared under effectual treatment, and returned as the effect of the treatment wore off. These and other facts suggest that these leukolysins are the direct products of the causal agents of the disease, and are an important factor in the pathogenesis of infectious diseases, especially from the standpoint of the defensive reactions.

Policlinico, Rome

Dec. 13, 1920, **27**, No. 50

*Galactorrhea. T. Luzzatti.—p. 1439.
*Vaccine Therapy of Whooping Cough. A. Cammarata.—p. 1442.
*Catheterization with Enlarged Prostate. P. Tilli.—p. 1444.
Unity of Syphilis Virus. G. Dragotti.—p. 1446.

Galactorrhea.—In the case described by Luzzatti, colostrum began to flow from the breasts at the fourth month of the first pregnancy, and the flow kept up profuse until term. After the birth of the child the milk began to flow profusely, and this kept up for several months longer, a total of ten months of this annoying galactorrhea, the incessant dribbling keeping the woman constantly soaked with milk. She seemed normal otherwise except for signs of hypertonia of the sympathetic system. Under astringent treatment of cracks in the nipples, glycerin with tannin with fomentations, with a support for the breasts, the dermatitis healed, and with it the mammary secretion subsided to normal limits and the woman could be considered cured. The irritation from the constant moisture had evidently maintained a vicious circle by reflex action, and the cure of the dermatitis had broken it up. Luzzatti does not know of any instance of colostrorrhea in the pregnant on record.

Vaccine Therapy of Pertussis.—Cammarata adds ten cases to the long list previously published by Caronia and Pastore, all testifying to the very satisfactory results of vaccine treatment of whooping cough. He made from eight to ten injections but did not happen to begin them until the tenth to the twentieth day of the severe whooping cough.

To Facilitate Catheterization.—Tilli remarks that nearly every physician has encountered cases in which it seemed to be impossible to introduce the catheter into the bladder, and an emergency operation became necessary. He has never had this experience since he has been making a practice of introducing the soft catheter, No. 18, as far as it will go, and then inserting through it a stiff metal catheter, No. 8 or 10, duly curved, and pushing this as far as it will go. Then he twists the soft catheter on this metal catheter guide, lifting the penis to promote its progress. The soft catheter gradually worms its way into the bladder. The metal catheter does not force the obstacle, but it serves to transmit to the soft catheter the force from the fingers, and this in the correct direction. He has never had this little maneuver fail or had the least harm result from it.

Riforma Medica, Naples

Nov. 20, 1920, **36**, No. 47

Early Bacteriologic Diagnosis of Cholera. G. Pansini.—p. 1069.
Precipitation in Serum Does Not Reduce Its Complement Value. G. Tiscornia.—p. 1073.
Genital-Dystrophic Geroderma in Insane Epileptic. A. Gadani.—p. 1073.
*Microbiologic Test for Sugar in Urine. I. Iacono.—p. 1075.

Nov. 27, 1920, **36**, No. 48

The Ambard Ureosecretory Constant. G. Nicolich.—p. 1097.
Experimental Immunization Against Typhoid, Paratyphoid and Dysentery. M. Mazzei.—p. 1099.

Mycologic Test for Sugars in Urine.—Iacono states that Castellani's further research has confirmed the simplicity and reliability of what he calls the conjugated or parallel mycologic test for sugars. He adds an equal quantity of 1 per cent. solution of peptone to the urine and then sows it with a fungus, *Monilia balcanica*, which develops gas only in the presence of glucose. Other tests with other monilias which develop gas only in the presence of some other sugar, differentiate the exact sugar involved. The specimen of urine or other fluid can be tested with the different monilias in turn, and the whole scale of sugars it contains can thus be determined.

Archivos Latino-Amer. de Pediatría, Buenos Aires

September-October, 1920, **14**, No. 5

*Case of Ophthalmoplegia in Boy. E. Caprario.—p. 404.
*Case of Intestinal Trichomoniasis. J. Bonaba.—p. 407.
*Measles and Membranous Croup. L. Morquio.—p. 412.
*Abortive Measles. M. Maria Armand Ugón.—p. 417.
*Pneumococcus Arthritis and Meningitis. V. Zerbino.—p. 419.
Lethargic Encephalitis in Two Children. C. Pelfort.—p. 423.
*Pericarditis with Mediastinitis and Cirrhosis of Liver in Boy. Mamerto Acuña and J. P. Garrahan.—p. 426.
Fatal Uremia in Boy of Fifteen. J. C. Navarro.—p. 436.
Value of Tuberculin Treatment. L. K. Wimmer.—p. 442.

Transient Ophthalmoplegia.—The 7 year old child, free from hereditary taint, suddenly developed fever and intense headache, mostly above the right eye. These symptoms abated the next day but then came diplopia, strabismus and paralysis of the external rectus on that side. All these symptoms gradually subsided by the tenth day without leaving a trace.

Trichomoniasis.—Bonaba found large numbers of trichomonas in the stools of a boy of 4 who had been having a dysenteriform diarrhea for a month. During an intercurrent mild measles no trichomonas were to be found but they reappeared after recovery. Treatment with turpentine by Escomel's technic was only slightly effectual and emetin was then given. By mistake a larger dose (4 cg.) was administered than intended, on two consecutive days. This induced vomiting, chilliness and collapse, but this toxic shock answered the purpose, the parasites disappearing definitely from the stools. The measles had displayed a partial action of the same kind.

Measles and Croup.—Morquio refers to the intense epidemic of measles prevailing at the time in his city, while diphtheria is endemic. The simple laryngitis in the measles of former epidemics was merely one element of the disease, but in the present epidemic it seems to invite diphtheria, so that membranous croup is a not infrequent complication now. Three

typical cases are described, and the prompt injection of antitoxin urged whenever a child who has or has been having measles exhibits laryngeal symptoms.

Abortive Measles.—Three infants from four to nine weeks old were in charge of one wetnurse who developed severe measles. Eight days later the three infants presented an abortive type of measles.

Pneumococcus Meningitis.—Zerbino mentions seventeen cases of pure pneumococcus meningitis in Morquio's service, and three in which the pneumococcus was associated with other bacteria. He reports the case of an infant of 10 months who had bronchitis and a suppurating process in the ankle, with pneumococci in the pus, and terminal meningitis.

Pericardiomediastinitis with Enlarged Hard Liver.—The typical Hutinel's disease had developed in a boy of 13 with inherited syphilis. There was no pleural effusion and no ascites. The symptoms and long course indicate a process with growth of fibrous tissue. It may perhaps be of tuberculous origin on the basis of the inherited syphilis, but the condition has grown no worse in the last year and there is comparatively little subjective disturbance.

Brazil-Medico, Rio de Janeiro

Oct. 23, 1920, **34**, No. 43

Removal of Foreign Body from Bronchus of Boy of Ten. F. Castilho Marcondes.—p. 703. Conc'n in No. 47, p. 777.
*"Nervousness." U. Paranhos.—p. 705.
Leeches of Brazil. III. C. Pinto.—p. 707.
*Gastralgia Early in Syphilis. J. P. Botelho Vieira.—p. 709.

"Nervousness."—Paranhos stresses the importance of the most scrupulous examination of the patient from head to foot seeking for the cause of the "nervousness." Most frequently the endocrine system is at fault and this can usually be brought under control. Endogenous or exogenous toxins frequently are responsible for the nervous condition and especially the combination of varicose veins, headache, dizziness and depression which Castellino groups as the hemorrhoidal syndrome. Old inveterate cases are sometimes traceable to unsuspected syphilis. An organic cause can generally be found sooner or later.

Painful Gastritis Early in Syphilis.—Botelho Vieira was summoned to relieve intense gastralgia which had developed suddenly in a man of 29 and had persisted for about two months. The fact that the gastralgia was worse at night and that the pain was localized at the pylorus, suggested syphilis, and a source of possible contagion was ascertained twenty days before the onset of the gastralgia, and a still unhealed chancre was found. Under specific treatment, conditions in the stomach returned to normal, and there has been no further disturbance during the three years to date.

Nov. 20, 1920, **34**, No. 47

Causes of Failures with Laparotomies. J. de Mendonça.—p. 767.
Importance of Syphilis and Its Treatment. O. Clark.—p. 771.
*Pseudo-Urinary Abscesses. C. Burgos.—p. 779.

Pseudo-Urinary Abscesses.—Burgos reports the cases of two men with a tumor in the perineum and difficulty in micturition, but in neither of these cases was a urine abscess the cause of the disturbances. The operation revealed in one a small fibrous tumor compressing the meatus, with a local gonococcus process, and in the other a high perineorectal fistula. In a third case a bullet wound had caused a fistula between rectum and urethra. All were cured by the operative measures applied. In the last mentioned case, as Burgos says, he spent forty days in the vast sewer resulting from the fistula, clearing out the remotest crevices, etc.

Gaceta Médica de Caracas

Sept. 15, 1920, **27**, No. 17

Classification of Ascaris Found in Chicken. J. M. Romero Sierra.—p. 215.
Ascarid Found in Stools of Two Children. Idem.—p. 216.
Ankylostomiasis in Venezuela. C. E. Salom.—p. 218.

Sept. 30, 1920, **27**, No. 18

National Tribute to Memory of Dr. J. G. Hernández.—p. 225. See News Dept., Nov. 13, p. 1352.
The Surprises of Appendicitis. E. P. de Bellard.—p. 235. Idem. L. Razetti.—p. 235.
New Species of Conorhinus. J. Quintini M.—p. 238.

Revista Española de Medicina y Cirugía, Barcelona

October, 1920, **3**, No. 28

Acquired Stenosis of Vagina. F. Proubasta.—p. 525.
*Early Diagnosis of Cancer of Stomach. A. Pérez Ortiz.—p. 528.
Postoperative Mishaps with Tonsillectomy. L. Vila Abadal.—p. 530.
Deep Roentgen-Ray Treatment of Cancer. Comas and Prió.—p. 532.

Early Diagnosis of Gastric Cancer.—In addition to the usual tests, Pérez Ortiz ascribes great differential importance to what he calls "absorption of the wave." A wave in the fluid in a smooth walled organ is transmitted regularly to all the parts of the wall of the organ. But if there is any unevenness in the wall, the wave is broken up, and the smooth, regular transmission is arrested. The transmission of the wave when the stomach is full of fluid is interrupted in case of cancer, and the interruption is greater the more the cancer protrudes. He has also noted a reduction in the power of conducting electricity in cases of cancer, and especially with scirrhous cancers. Lecithin is one of the substances most commonly met with in embryonal bodies, such as egg yolk, semen, graafian follicles, fish spawn, etc., and consequently he suspected that it would be found in extra amounts in cancer cells, as these are a kind of pseudo-embryonal formation. His suspicion was confirmed, lecithin being found in stomach content and feces when there is malignant disease in the stomach. After a few days of lecithin-free diet and lavage of the stomach the night before, he introduces into the fasting stomach 15 gm. of water or oil or dilute alcohol, and an hour later examines the stomach content for lecithin, precipitating it with a few drops of a solution of ammonium molybdate. On adding a few drops of sulphuric acid to the precipitate, a green ring, changing to violet, forms at the point of junction. Or the lecithin can be precipitated with barium chlorid or platinum chlorid, etc. For the stools he proceeds as for occult hemorrhages, and then applies the above test as for lecithin in oil. By mixing the precipitate with ammonium magnesium, and weighing, the quantity can be determined, but the qualitative test is usually sufficient. The softer cancers usually yield more lecithin than the scirrhous type. He regards this method as one of the simplest and most reliable means for an early diagnosis of cancer of the stomach. It has the advantage over other methods that the lecithin production presumably starts with the incipiency of the malignant disease.

Revista Médica del Uruguay, Montevideo

September, 1920, **23**, No. 9

*Syphilitic Croup. F. Arocena.—p. 411.
Ocular Symptoms of Lethargic Encephalitis. A. Isola.—p. 414.
The Fight Against Tuberculosis. G. Pelfort.—p. 427.

Syphilitic Croup.—Arocena refers to syphilitic disease of the throat presenting the same picture as membranous croup, as he observed it in two small boys in one family in a rural district. Diphtheria was somewhat prevalent in the region at the time and the croupy breathing, inflammation in the throat, and pseudomembranous patches on the tonsils imposed the diagnosis of diphtheria, and antitoxin was administered. The throat symptoms had begun about two days before. Two days later the symptoms were much aggravated in the younger child, stationary in the other. Antitoxin was injected anew, but the condition continued to grow worse in the younger child, and Arocena in view of the failure of the antitoxin began for the first time to doubt his diagnosis, and think of syphilis. He ascertained that the young and healthy parents had had a maid servant for a year whom they had dismissed about two weeks before, and Arocena discovered that she was a patient of his, in a most highly contagious phase of syphilis. He examined then the third child in the family, and found a well defined roseola on the chest.

Semana Médica, Buenos Aires

Nov. 11, 1920, **27**, No. 46

*The Spermatozoa of Syphilitics. V. Widakowich.—p. 633.
Training in the Care of Children. T. A. Tonina.—p. 670.
Psychasthenia from Tardy Inherited Syphilis. G. Bermann.—p. 675.

The Spermatozoa of the Syphilitic.—An extensive bibliography and sixty-four illustrations of anomalous forms of spermatozoa accompany this report of Widakowich's further research on the exceptional prevalence of deformed spermatozoa in syphilitics. He discusses it from a number of

standpoints, tabulating the findings in parallel columns with the findings in normal men of different ages. The average of pathologic forms in the large group of healthy men was 18.6 per thousand and in the fifty-eight syphilitics 55.8 per thousand. More than two heads plus two tails was never found in the healthy, while three heads plus two tails were found in 0.09 per thousand of the syphilitics and even up to four heads plus four tails in 0.06 per thousand. Abnormally large and abnormally small heads were found in 3.93 and 9.34 per thousand in eight syphilitics, and anomalies in the intermediate portion in 13.75 per thousand, while the corresponding figures in the healthy were 0.09; 1.58 and 5.86. In a group of youths, the total of pathologic forms was 55.8 per thousand in the syphilitic; in the healthy, 18.7 per thousand. In a group of young men examined, the remarkably large proportion of abnormal spermatozoa—up to 100 and 117 per thousand in two of the young men—first revealed their inherited syphilis. The number (five cases) is too small to be decisive, but the proportion of pathologic forms was double that in the cases of acquired syphilis.

Siglo Médico, Madrid

Sept. 4, 1920, **67**, No. 3482

*Meningitis Consecutive to Spinal Anesthesia. J. Sanchis-Banús.—p. 665.
Necessity for Including Psychology in Medical Course. H. F. Delgado (Lima).—p. 668.

Meningitis Consecutive to Spinal Anesthesia.—The young man developed intense headache and vomited, forty-eight hours after inguinal herniotomy under procain spinal anesthesia. High fever, herpes on the lips, and other signs of meningitis were explained by the turbid lumbar puncture fluid, and *Diplococcus crassus* was cultivated from it. The meningitis proceeded to a rapidly fatal termination. Whether the diplococcus infection had been already installed at the time of the operation and had flared up under the irritation from the spinal anesthesia, or whether the infection was an accidental contamination, or whether a saprophyte had been roused to virulence by the trauma of the operation, are open questions.

Archiv für Gynaekologie, Berlin

1920, **113**, No. 2

*Symphysiotomy or Pubiotomy. G. Broer-Lindemann.—p. 229.
*Normal and Pathological Ovulation. R. Meyer.—p. 259.
*Spontaneous Infection in Childbirth. W. Puten.—p. 316.
*Parturition Injuries and Feeblemindedness. Schott.—p. 336.
*Caries of Symphysis and Pubic Bone. S. Speyer.—p. 363.
*Ectopic Epithelioma of Chorion. R. Zimmermann.—p. 370.
The "Butter Globules" in Dermoid Cysts. K. Friedländer.—p. 413.
Cystic Hypertrophy of Uterus. M. Henkel.—p. 427.
Formation of Gubernaculum Testis. R. Meyer.—p. 441.

Symphysiotomy or Pubiotomy.—Lindemann, acting upon the suggestion of Frank, introduced into the Gynecological Clinic at Mainz the method of subcutaneous symphysiotomy in eighty-six cases of narrow pelvis. The mortality among the mothers was 0, among the children 8.1 per cent. The operation was indicated with great care, in that 50 per cent. of cases with flat, rachitic pelvis were allowed to proceed to spontaneous delivery. The operation proved superior, in its effects, to either caesarean section or pubiotomy, because it lessens the danger for the mother and facilitates later deliveries. A complete statistic analysis, with clinical data fully tabulated, of all eighty-six cases, is appended.

Normal and Pathologic Ovulation.—Meyer continued his studies (*ibid.*, Vol. 100 [1913]) of menstruation and ovulation and concludes that menstruation is not due to rhythmic-specific processes, but to the limited life of the unimpregnated ovum. This does not die suddenly at regular or slightly varying intervals, but gradually, through loss of its functional faculty, and simultaneous with gradual changes in the corpus luteum (accumulation of fatty substances, probably already on the twenty-second to the twenty-sixth day after menstruation). The living ovum retards the development of the remaining, less developed ova, probably by the aid of the corpus luteum, but this retardation ceases with the death of the ovum, whereupon the cycle begins anew. The corpus luteum possesses no immanent duration; its life depends on that of the ovum. Without the functional irritation of the corpus luteum, the uterine mucous membrane will not receive the nutrition necessary to support the pregravid state, consequently, with the death of the corpus luteum it reassumes the atrophic condition of presexual and postsexual life. Menstruation is a necrotic process with hemorrhage: a consequence of the cessation of function. The cessation of physiologic function is relieved by the development of the next ovum, when the pregravid status returns. The cycle thus is primarily one of ovulation, and it is incorrect to speak of a menstrual cycle, or periodicity.

Spontaneous Infection in Childbirth.—Poten analyzes 20,125 cases, of which 15,291 terminated without fever; 3,602 developed fever. Of the latter, about 26 per cent. might be owing to infections induced by handling or examining the patients. In 5,349 cases where no prepartum examination was made and no postpartum interference was necessary, 12 per cent. showed fever symptoms. The question of a possible spontaneous infection is closely related to the weaknesses of antisepsis as commonly practiced, and which at best is insufficient. While a *noli-tangere* treatment may be theoretically preferable in healthy individuals, experience shows that even with this precaution grave dangers arise, not only from postdelivery infections, but also from the absorption of their products. The postpartum injection of 0.5 per cent. lactic acid is recommended as a protection against vaginal infection, in preference to vaginal douches which in themselves frequently are dangerous owing to their insufficiency.

Birth Injuries and Feeblemindedness.—Schott found in 1,100 cases of epilepsy 16.63 per cent. with a history of injuries at birth. The complications include difficult and prolonged labor, forceps delivery, twin and triplet birth, and navel injury. Most of these histories were complicated with nervous lesions in one or both parents. An analysis of the material shows that difficult and protracted labor is connected with feeblemindedness in the child, while premature delivery and birth after a fall give rise to submeningeal hemorrhages. Navel hemorrhage is followed by a retardation of mental development. Part II of this paper is concerned with epilepsy. The possibility of a combination of birth injury and a spasmophilous diathesis in one or both parents, as a component contributory cause of epilepsy, cannot be denied. But there are no data showing a direct causation from birth injuries without an anamnesis showing nerve lesion in one or both parents.

Caries of Symphysis and Pubic Bone.—Speyer describes two cases of this rare disease and mentions seven others. The only possible treatment is surgical removal of the affected portions, tamponade with iodoform gauze, and treatment with iodoform-glycerin. The prognosis is favorable, including possibility of locomotion.

Ectopic Chorio-Epithelioma After Vesicular Mole.—Zimmermann regards the proliferation of the chorion epithelium as a process analogous to the penetration of the endometrium epithelia by the human ovum and the interstitial imbedding of the latter in the decidua. On the basis of clinical findings and biological experiments on the involved tissues, he reached the conclusion that the serum of gravid subjects contains specific or unspecific lysins directed against the fetal elements. The chorial invasion histologically presents a picture of cells uniformly in a regressive stage beside young, strongly stained, fresh ones. This indicates that the villus epithelium shows an excessive proliferative tendency: a sign of a poverty of cytolysins in the serum of the particular individual. Other investigations have demonstrated that the serum of women suffering from malignant deciduoma does not possess the faculty of dissolving cancer cells. The many analogies between fetal cells and cancer cells make this relation significant.

Deutsche medizinische Wochenschrift, Berlin

Oct. 7, 1920, **46**, No. 41

Tardy Peritonitis in Childbed. M. Henkel.—p. 1133.
Heart Tone and Paralysis After Diphtheria. U. Friedmann.—p. 1134.
Localization and Origin of Gastric Ulcers. K. H. Bauer.—p. 1136.
Case of Gastric Myoma. L. von Friedrich.—p. 1139.
Surgery of the Bile Ducts. W. Budde.—p. 1139.
Polycythemia as Hereditary Endocrine Disturbance. Engelking.—p. 1140.
Abderhalden Dialysis Test in Renal Tuberculosis. Fritsch.—p. 1142.
The Radial Nerve Phenomenon. T. Hofa.—p. 1144.
Counting in Place of Coughing for Roentgenographic Examinations of Apex of Lung. S. Kreuzfuchs.—p. 1145.
Otologic Hints for General Practitioners. G. Brühl.—p. 1145.

Deutsche Zeitschrift für Chirurgie, Leipzig

1920, **157**, No. 3-4

*Cystic Tumors of the Knee-Joint. M. Jastram.—p. 145.
*Surgical Topography of Struma. H. Klose.—p. 157.
*Osteochondritis and Traumatic Loose Bodies in Joints. M. Kappis.—p. 187.
*Origin of Loose Bodies in Joints. M. Kappis.—p. 214.
*Gallstone Surgery. W. Eichmeyer.—243.
*Renal Cysts. Brandenstein.—p. 261.
*Intratracheal Struma. W. Odermatt.—p. 279.

Ganglion or Cystic Tumor at the Knee-Joint.—Jastram found in previous literature twenty cases of cystic tumors developing on the knee. One, of traumatic origin, was fully described by Ebner in 1904. Sex frequency is 82.5 per cent. for men, 17.5 per cent. for women, while cases of carpal ganglion give the relative figures of 87.5 and 12.5 per cent. The etiology of all cases, including author's, show an initial strain, with consequent edema, which induces a degenerative process in the connective tissue, with secondary changes in the blood vessels. Operation is indicated owing to the proximity of the knee-joint capsule, with which some of the cystic tumors have been found to connect. These tumors are liable to develop at any point where there is fibrous tissue.

Surgical Topography of Growing Goiter.—Klose makes a distinction between struma diffusa and struma nodosa, the first being a phase of exophthalmic goiter, the second of common goiter. The diffuse form is the result of a cellular and functional hypertrophy, or even dystrophy of the thyroid (entire or partial); the nodosa form is an adenoma of the same organ, an abnormal development with the character of a tumor. The growth of the struma takes place in the direction of least anatomical resistance. A distinction is made of the following forms: 1. Struma of the neck. 2. St. intrathoracica: (1) St. intrapleuralis. (2) St. mediastinalis: (a) anterior, (b) posterior. Diagnostic data and clinical symptoms are given for each form, and typical cases cited.

Osteochondritis Dissecans and Traumatic Loose Bodies in Joints.—Kappis reviews the history of loose bodies in joints as fragments of bone or cartilage become detached, spontaneously, or traumatically, and undergo a necrotic process. He denies the existence of an osteochondritis in the sense of König (1887), and describes a case of a knee-joint where a flake of cartilage (3.6 by 3 cm.) had detached itself and caused an effusion, and exemplifies an unmistakable fracture and the earliest observed stage of loose body in a joint. Seven other cases, without a history of trauma, were analyzed, also some of undoubted traumatic origin. At the elbow joint forty-five cases of loose bodies were observed, thirty-seven of which were caused by cartilage detachment at the capitulum humeri. In twenty-one of these cases a slight trauma could be definitely determined. Aside from the patella, where a similar process now and then occurs, the condyles of the femur and the elbow are the only points where this detachment of the cartilage is liable to occur, with production of loose bodies. Common to these joints is the power of angle and torsion movements which occasionally induce abnormal positions; and as the attendant phenomena of pressure and tangential effects naturally affect the convex element of the respective joints, it is natural that no cartilage detachment ever has been observed at the concave surfaces. The initial lesion probably is exceedingly slight. If the cartilage segment remains in situ, and no interarticular hemorrhage occurs, the surface will be unbroken except for minor irregularities, but when the cartilage remains attached to its bed by a pedicle, the bone will produce a callus; and as the cartilage forms no such, the fracture develops into a pseudarthrosis, in the fissure of which manifold pathological processes may be exemplified. While the surface layer of the cartilage segment is nourished by diffusion from the synovia, its deeper elements are separated from the blood supply, and this gives rise to necrosis which is complicated by ever possible fresh traumas. Early operation is the only means of lessening the consequences of these complications and the danger of recurrent arthritis.

Structure, Growth and Origin of Loose Bodies in Joints.—Kappis makes an exhaustive histological investigation of the formations discussed in the previous paper. He describes the transformation of the completely detached cartilage tissue into fibrocartilage capable of intense proliferation, without perichondrium, while a bone loose body invariably becomes necrotic. No hyaline cartilage is formed. Previous literature is discussed exhaustively.

Gallstone Surgery.—Eichmeyer describes a case of gallstone disease in a gravida at sixth month, where condition necessitated cystectomy and choledochotomy with drainage of the deeper bile passages. Adhesions were numerous and exceedingly complicated, the gallbladder perforated. The pregnancy continued normal, and delivery occurred normally. Other cases are discussed with the result that operation during pregnancy should be undertaken only when medicinal treatment fails and weakness becomes extreme.

Renal Cysts.—Brandenstein describes fully a correctly diagnosed and clinically treated fatal case in a girl of 17. The tumor was ball-shaped, growing from one pole of the kidney, cystic, filled with an amber exudate containing traces of urea, uric acid, grape sugar and a large amount of albumin. Its presence is detected by radiography considered in connection with status of intestines, the position of which is affected. The operation may or may not include nephrectomy. A pararenal cyst, with operation, also is described and discussed.

Intratracheal Strumas.—Odermatt collected twenty-five cases from previous records and adds one, which he treated by operation. The radiograph is facilitated by exposure from the side by strong reclining of the head and extreme dorsal position of arms and shoulders. Where this position produces dyspnea, an additional ventrodorsal exposure is made. In the case of all tumors with a broad base, such as these strumas, cricotracheotomy is the surest way of relief.

Münchener medizinische Wochenschrift, Munich

Oct. 1, 1920, **67**, No. 40

Technic of Artificial Pneumothorax. E. Leschke.—p. 1135.
Intermittent Therapy and Effect of Narcotics. H. Königer.—p. 1136.
*Partial Antigens in Tuberculosis. A. Ott.—p. 1139.
Growth of Bean Sprouts—Vicia Faba Equina—as Gage for Biologic Value of Roentgen Irradiation. O. Jüngling.—p. 1141.
Aneurysm of Aorta from Contusion. Toenniessen.—p. 1144.
Deformity as Result of Resection of Tuberculous Knee Joint in Childhood. M. Schwamm.—p. 1145.
Character and Treatment of Epicondylitis. W. von Goeldel.—p. 1147.
Treatment of Nerves in Amputation Stumps. A. Hedri.—p. 1148.
Metastatic Paranephritis After Influenza. W. Boecker.—p. 1149.
Brain Edema After Injection of Neo-Arsphenamin. Von Lücken.—p. 1149.
Treatment of Gastric Hemorrhage. R. Decker.—p. 1149.
Proposed Terminology for the Stomach. J. Volkmann.—p. 1150.

Six Years Experience with the Treatment of Pulmonary Tuberculosis with Partial Antigens.—Ott says that, in order to test properly and with any degree of thoroughness a remedy for which its discoverers, on the basis of long and extended experience, have set up pronounced therapeutic claims, four requirements must be complied with: The examiner must be familiar with the method of using the remedy, and test it long enough. Ott used the partial antigens from February, 1914, until into 1917, not only in ambulant treatment but also in hospitals. The number of patients must be sufficiently large to eliminate as far as possible the element of chance, which plays a part in all disease. Ott can report on at least 489 cases of pulmonary tuberculosis. Finally, the remedy must be tested impartially and with interest, otherwise it is easy to bring any remedy into discredit by selecting hopeless cases. For purposes of comparison, he gives the result in 420 practically corresponding cases formerly treated by him with old tuberculin. The results are essentially the same as with the Deycke-Much partial antigens. Ott concludes that the Déycke-Much partial antigens are by no means entirely innocuous. In their therapeutic effects they are not in the least superior to tuberculin. He is also convinced that the theoretic premises of the treatment rest on a very uncertain basis.

Wiener klinische Wochenschrift, Vienna

Sept. 30, 1920, **33**, No. 40

Study on the Genesis of Fear. R. Stern.—p. 875.
*Rôle of Bacillus Coli in Induced Peritonitis. F. Gál.—p. 878.
Inflammation of Meckel's Diverticulum. H. Lehmann.—p. 884.
Parathyroid Graft in Pregnancy Tetany; Recovery. N. Röth.—p. 886.

The Rôle of the Colon Bacillus in Induced Peritonitis.—Gál's experimentation on guinea-pigs was for the purpose of ascertaining whether it is possible by means of bacteria or their products, and more particularly by means of *Bacillus coli*, to influence infectious inflammations of the peritoneum. The fact that the colon bacillus can assume the most diverse characters under varying circumstances, having a strong tendency to variations and mutations and easily changing its virulence, made it seem quite likely that it might exercise considerable influence. In how far these results are applicable to the human body must be shown by clinical investigations. In any event he thinks the results justify further investigation in this field. It seems probable that with the fundamental idea as a basis many interesting results may be anticipated. His investigations showed that guinea-pigs with induced peritoneal infections can be cured for the most part by means of an autolysate of *Bacillus coli*. The autolysate exerted no particular influence on the opsonic index, but it induced leukocytosis and a more marked phagocytosis of various bacteria in the abdominal cavity, and thus indirectly counteracted the toxicity of the bacteria. The greater omentum was the main center of the conflict.

Zeitschrift für Geburtshülfe und Gynäk., Berlin

Feb. 14, 1920, **82**, No. 2

*Gynecologic Disturbances After Severe Burns. K. Beckey.—p. 257.
*The Fetal Heart Sounds. E. Sachs.—p. 284.
*Myoma and Childbearing. E. Hindermann.—p. 357.
*Treatment of Febrile Abortion. L. Missler.—p. 382.
*Iniencephalus. B. Michel.—p. 403.
*Eclampsia Without Convulsions. F. Ranzel.—p. 427.
Criminal or Infectious Abortion? M. Henkel.—p. 438.
*Roentgenography of the Placenta. Warnekros.—p. 458.

Effect of Severe Burns on Menstruation and Pregnancy.—Beckey comments on the scant literature on the relations between trauma and menstruation, and relates his own observation of fifty-four women and girls burned in an explosion in a munitions factory. Nearly all developed fever, vomiting, delirium and apathy, confirming the assumption that a severe burn causes an anaphylactic reaction from the toxic action of the products of parenteral albumin destruction. But the effect on menstruation and gestation is mainly if not entirely of psychogenous origin. This is shown (1) by the sudden arrest of menstruation in some of the women; the immediate arrest of the menses already under way can be explained only by a psychic reflex; (2) by the fact that two of the women in the room who were not burned at all presented the same menstrual disturbances, and (3) by the psychoneuroses which developed in nearly all, both the burned and the nonburned. Menstrual disturbances of different kinds were noted in 93.3 per cent. Four of the women were pregnant and the explosion was followed by expulsion of the contents of the uterus in two of the women, two and five months pregnant. In the two others, at the third and eighth months, the pregnancy continued unmodified to term. The details of the fifty-four cases are tabulated on six pages. Amenorrhea for five or six months is recorded in six cases, amenorrhea persisting to date in four others, while in the others menstruation was of an abnormal type thereafter in nine.

The Fetal Heart Sounds.—Sachs has a record of the curve of the fetal heart sounds as determined in 4,000 cases at fifteen, five or one minute intervals during the pauses between the labor pains. The normal range is from 132 to 144, but a drop to 120 and rise to 160 is so common that they cannot be regarded as pathologic. But a drop below 100 or rise to over 160 is not within the physiologic range. A rise above 160 calls for close supervision but does not in itself demand artificial delivery. But a drop below 100 or fluctuation within a very wide range above this is a warning of grave danger. The typical danger curve shows a primary drop, but the danger does not become acute until the count goes below 100. The lower it drops, the greater the danger. Sachs declares that delivery is imperatively called for when the count is found below 100 in several successive intervals between labor contractions. Even the first drop below 100 may indicate the gravest danger, as showing blocking of the child's circulation. This can occur only from traction on a too short cord or by the cord being squeezed flat. This is liable to occur from the inflatable bag when the attachment of the cord is low. The drop in the count below 100 was sometimes observed from exaggeration of the labor contractions under the influence of pituitary treatment. But this drop was transient and seemed to be harmless. "Under other conditions," he reiterates, "a sudden drop from the normal range to below 100 even during a single interval between labor contractions, during the expulsion phase, calls imperatively for delivery at once, even although in very rare cases this may prove to have been unnecessary. If the drop below 100 occurs gradually, we have time for deliberation, possibly taking advantage of the subsiding labor contraction for auscultation." In conclusion he warns that forceps extraction is not free from danger for the child, and hence it should not be resorted to without strict indications. Sachs groups and tabulates his 4,000 cases from various standpoints, the causes for changes in the rate, importance of operations, of eclampsia, and of the Stroganoff treatment, etc.

Myoma and Childbearing.—Hindermann reviews the history of the connection between myoma and sterility from Galen down. He presents evidence from 690 myoma cases at Basel that uterine myomas develop indiscriminately in those who have many or few or no children or have never conceived. The social condition is also without influence.

Febrile Abortion.—Missler compares the outcome in von Jaschke's service with those of others. In the 141 cases of febrile abortion much better results were realized with expectant and conservative measures than with more active procedures. When the fever drops in previously febrile cases—which usually occurs under bed rest for two and a half days—then the uterus can be cleared out regardless of the kind of bacteria involved. The temperature should be taken several times for estimation of the fever. In the five fatal cases, hemolytic streptococci were found in one, ordinary streptococci in two, and staphylococci in two others. He advises the general practitioner to adopt this two and a half days of bed rest as the criterium for expectant treatment before proceeding to clear out the uterus. It can generally be waited for.

Iniencephalus.—Michel compares a case of this deformity with the literature on such monstrosities. The malformation must develop at an early stage of fetal existence, as he explains.

Eclampsia Without Convulsions.—The woman of 29, at term with her first pregnancy, presented symptoms diagnosed as eclampsia without convulsions and acute nephritis, and was delivered in coma by cesarean section of a viable child. The woman did not regain consciousness and died the next day. The organs showed the changes regarded as typical for eclampsia, but in addition Ranzel found a hemorrhage in the frontal lobe. He regards the eclampsia as responsible for this cerebral hemorrhage.

Roentgenoscopy of Placenta.—Warnekros allows 40 to 50 c.c. of blood to flow from the cord after it has been severed. This blood is mixed with a suspension of barium sulphate and is reinjected into the umbilical vein. He gives a series of eleven roentgenograms of the placenta taken in this way, with the placenta thus rendered visible, demonstrating the way in which the placenta is cast off. (Warnekros' communication is published in Society Proceedings.)

Zentralblatt für Chirurgie, Leipzig

Oct. 2, 1920, **47**, No. 40

*Access to Maxillary Nerve. E. Payr.—p. 1226.
Treatment of Large, Rigid Empyema Cavities. A. Tietze.—p. 1230.
Technic of Physiologic Gallbladder Incision. Pochhammer.—p. 1231.
"Mesenteric Pressure Pain as Symptom in Appendicitis." V. Kolbe. p. 1234.

A Simple Route to the Maxillary Nerve for Production of Anesthesia and for Alcohol Injections in Neuralgia.—For the last two years Payr has been using a new route to the second branch of the trigeminal, the maxillary nerve. This route passes above the zygomatic arch and leads to the pterygopalatine fossa. The superficial skin area is anesthetized by a wheal; then the needle, which is from 6 to 7 cm. long, is inserted immediately in front of the junction line between the temporal process and the zygomatic arch, in the angle between

the frontal and temporal processes of the zygomatic bone, pushed directly downward toward the sharp, concave margin of the zygomatic bone, about a finger's breadth behind the lateral border of the orbital cavity. It passes close behind said border and is then slanted backward toward the maxillary tuberosity, which it reaches at a depth of from 2.5 to 2.75 cm. from the margin of the bone where it was introduced or about 3 to 3.25 cm. from the skin surface. If the needle is inserted too far forward it may enter the inferior orbital fissure, but if guided properly it enters without resistance the pterygopalatine fossa and strikes the point where the nerve trunk gives off a number of branches that are important for the treatment of neuralgia; namely, the sphenopalatine, the posterior superior alveolar and the middle superior alveolar nerves, and is about to enter the orbit through the inferior orbital fissure. Payr thinks that by this route the way is not only shorter but also more clearly defined and less likely to give rise to errors. The technic is extremely simple. Injury of the internal maxillary artery is much less likely than if the needle is inserted beneath the zygomatic bone. In six cases of neuralgia of the maxillary nerve, Payr has made alcohol injections in this manner with good success and without the slightest complications. Three illustrations show the technic.

Zentralblatt für Gynäkologie, Leipzig

Oct. 2, 1920, **44**, No. 40

Treatment of Eclampsia. F. Engelmann.—p. 1113.
*Anaphylactic Manifestations in Proteotherapy. Van Randenborgh.—p. 1128.
The Specific Ovarian Secretion. O. O. Fellner.—p. 1133.
"Significance of Diphtheria Bacilli in Vagina." Broer.—p. 1138.

Anaphylactic Manifestations in Proteotherapy.—Van Randenborgh calls attention to the unfavorable manifestations that sometimes follow parenteral administration of proteins: a few minutes after the injection, cyanosis, dyspnea, small pulse, occasionally unconsciousness, transient edema and transient erythema; a few hours after the injection, chills, fever and outbreak of sweat. Cachexia, which may follow the parenteral administration of large amounts of protein, is occasioned by the overproduction of proteolytic ferments.

Zentralblatt für innere Medizin, Leipzig

Oct. 2, 1920, **41**, No. 40

Prevention and Treatment of Influenza. F. Jessen.—p. 690.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Nov. 13, 1920, **2**, No. 20

*Roentgen-Ray Treatment of Surgical Tuberculosis. A. van Ree.—p. 1985.
Causes and Diagnosis of Disease of the Cecum with Chronic Colitis. J. W. M. Indemans.—p. 1995.
*Cinnabar for Roentgen-Ray Examination. J. G. Kopp.—p. 2009.

Roentgen-Ray Treatment of Surgical Tuberculosis.—Van Ree expatiates on the brilliant results he has obtained with radiotherapy of tuberculous glands. In most of his 470 cases the glandular lesions were in the neck, but some were in the axilla or groin. Improvement was realized in every instance and a clinical cure in 85 per cent. within a few months. The length of the treatment required can be estimated from the first as benign tuberculous glandular lesions develop slowly and gradually and run a torpid, painless course. The more malignant processes make their presence felt from the first, and are always tender and soon develop fistulas. This type is more rebellious to the roentgen rays and usually requires preliminary surgical measures. The benign type may be larger but they retrogress under a few exposures. A cheesy agglomeration of lymphomas may require six or eight exposures at three week intervals, and after this a few treatments at three month intervals. The cheesy matter can be aspirated through a large needle, and any particularly favorably located single gland can be excised. An abscess of this painless type can be punctured in association with a few exposures at three week intervals. He advises against opening the abscess with an incision. In other types the painful glandular process, if solitary, had better be excised, followed by six roentgen-ray exposures. If inoperable, the exposures alone must be the reliance. When combined with an abscess, he advises incision with one exposure a week but never to expose red skin. The result is generally a scar and sometimes a fistula. When the abscess has already broken through the skin, he advises ample opening up of the gland, scraping out cheesy masses, and a few exposures at three week intervals. The turn for the better occurs immediately and invariably after the exposure of the tuberculous gland, but bone and joint processes are not amenable except those in small bones in hands or feet, which give very favorable results. Amputation of fingers and toes is no longer necessary, as the tuberculous lesions may heal under the roentgen rays, merely removing sequesters. Tuberculous processes in ribs, sternum and skull bones are also liable to be favorably influenced by radiotherapy. If there is a fistula, it should be curetted and the exposures will complete the cure. He adds that tuberculous epididymitis responds to the roentgen rays as favorably as the glandular processes.

Cinnabar for Contrast Suspension in Roentgen Work.—Kopp relates that a 50 per cent. suspension of cinnabar has been used in his service for seven or eight years for all roentgen examination of stomach, intestines or blood vessels. There has never been the slightest indication of toxic action therefrom, while the shadows cast by the cinnabar are much sharper than with other contrast meals. This technic shows up lesions which are not clear with other contrast suspensions, such as stenosis of the esophagus, cardiospasm, boring gastric ulcer, etc. The cinnabar passes through the digestive tract and is voided unmodified, its red color showing in the stools. The power of absorption of the roentgen rays possessed by cinnabar is particularly evident in roentgenography of blood vessels, as he shows by stereoscopic views of the hand, giving directions which enable the vascular system of the cadaver, to the finer ramifications, to be rendered visible by the contrast suspension. The red color shows even to the naked eye beneath the skin.

Hygiea, Stockholm

Dec. 16, 1920, **82**, No. 23

*Discharge of Meconium in Relation to Asphyxia. W. Gejrot.—p. 785.
Fee Book of Irish Physician, 1619-1633. V. Djurberg.—p. 805.

Discharge of Meconium During Delivery and Its Connection with Intra-Uterine Asphyxia.—Gejrot relates that there was discharge of meconium in 369, that is, in 5.72 per cent. of 6,437 deliveries at Stockholm. It occurred in the more difficult deliveries, as a rule, but in twenty-four instances of extreme asphyxia there was no passage of meconium. He is inclined to regard it as an anomaly which lies within or close to physiologic limits.

Ugeskrift for Læger, Copenhagen

Dec. 9, 1920, **82**, No. 50

*Secretion of Hydrochloric Acid in Infants. I. Chievitz.—p. 1529.
*Erythrocytes and Hemoglobin in Venous Blood. H. C. Gram.—p. 1543.

Gastric Secretion in Young Infants.—Chievitz tabulates the findings in 10 infants with rachitis or other disturbance but no gastro-intestinal disturbances, in 5 children from 4 to 12 years old, in 7 infants convalescing from dyspepsia, and in groups of others with different diseases, a total of 53 infants less than a year old. He found the proportion of hydrochloric acid less than in older children under the same conditions, but there was no difference to be noted between those being fed on milk or without milk. There was no congenital achylia in any of the infants. In the healthy the average response to the Günzburg test was 8, to congo paper 11, and to phenolphthalein 14. Much reduced secretion was found in 50 per cent. of the infants with digestive disturbance, and with acute parenteral disease the production of hydrochloric acid was often reduced a few weeks after the beginning of the illness.

The Hemoglobin and Erythrocyte Count in Venous Blood.—Gram found the hemoglobin range from 90 to 111 in thirty-two healthy men and the erythrocyte count from 4.85 to 5.82 millions in the venous blood. The corresponding figures in fifty-six normal women were 78 and 96 per cent. hemoglobin and 4.21 to 5.33 millions erythrocytes. Repetition of the tests showed approximately constant figures in the same persons under like conditions, notwithstanding the wide daily variations.